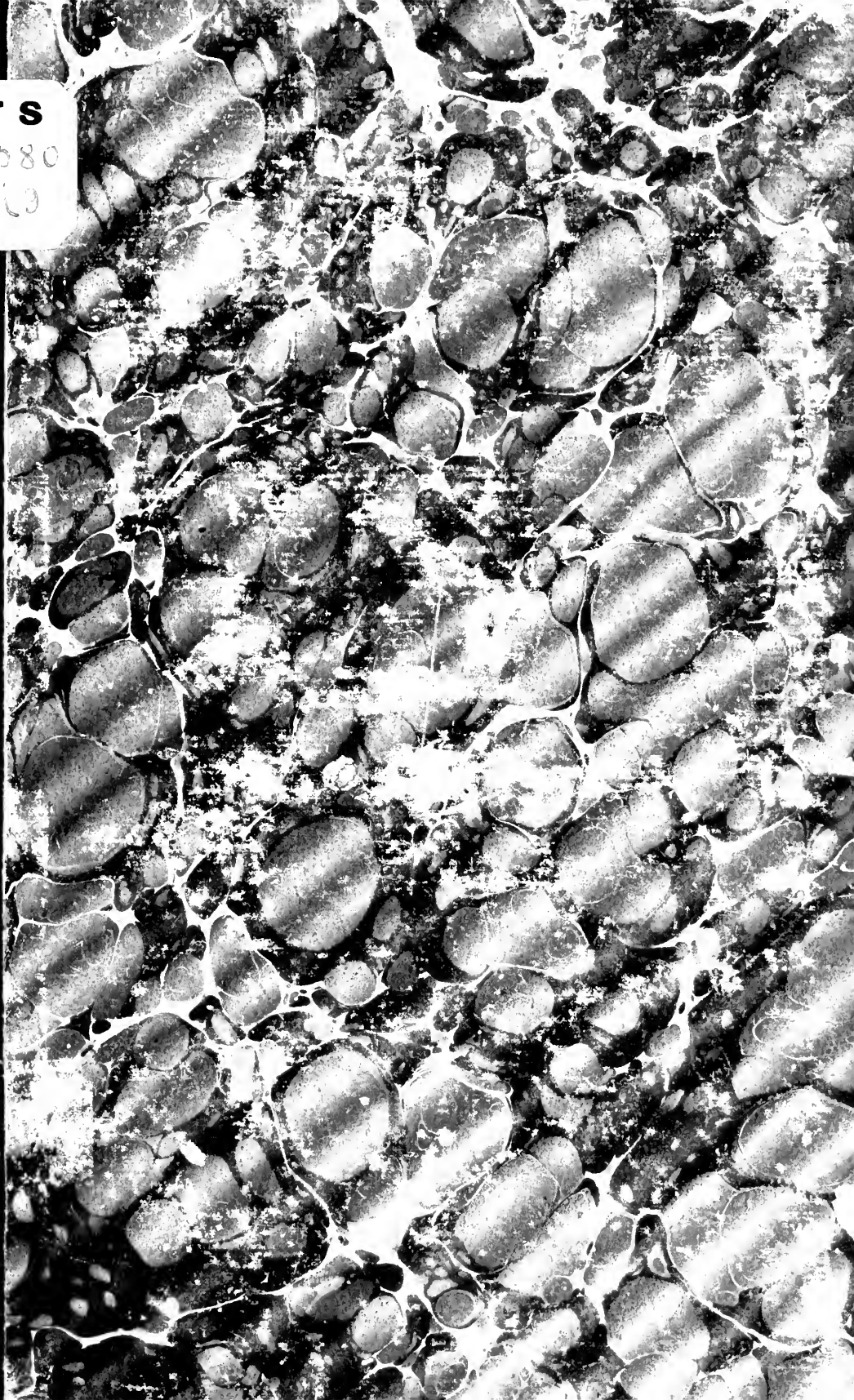


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# COTTON

THE MUNGER PATENT

COMPLETE SYSTEM

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OF



HANDLING, CLEANING, GINNING AND PRESSING.

DALLAS, TEXAS AND BIRMINGHAM, ALA.

FOR 1890 ✓

ROBERT A. MUNGER, BIRMINGHAM, ALA.  
BIRMINGHAM, ALA.  
1890

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## PLAIN TALK ABOUT HANDLING COTTON

IN THIS little book we have endeavored in plain language to show:

*First*, The bad state of affairs which exists now, and which has always existed, to an alarming extent, in the South with reference to its most valuable product, and the urgent necessity for the immediate adoption and use of a better method of handling, cleaning, ginning and pressing it, and preparing it for market, and to prove the same by experienced Spinners, Carders, Textile Journals, and other commercial authority.

*Second*, That we have a complete and perfect system of accomplishing this result to the perfect satisfaction of, as well as compensation to the best of cottoning and handling people of the world, and to prove the same by some of the leading Cotton Farmers and Merchants of the South, as well as Cotton Mill and Cotton Ginning owners and managers, who have seen, bought, tested and used it to their perfect satisfaction, and who are willing and ready to testify to the same.

Respectfully

*Munger Improved Cotton Machine Works, Co.*

*Dallas, Texas.*

R. S. MUNGER, Birmingham, Ala.



# OUR COMPLETE SYSTEM

**C**ONSISTS of one machine, which takes the cotton out of the wagon or bin, elevates, cleans, distributes, gins, tramps and presses it, and delivers it a perfect bale of perfectly ginned cotton without any handling whatever. We claim to-day, and have always claimed, many great advantages over any and all other systems ever offered to the cotton ginning world, all of which we are prepared to verify; among them, we will name, as compared with any system in existence, first:

## LESS ROOM REQUIRED

To any practical man this is obvious from a glance at the cuts, even without seeing the outfit at work. The sizes of buildings usually put up for our complete outfit will verify this, which are for one 70-saw gin outfit, 16x32; for two, 16x38; for three, 16x46, and for four gins, 16x54. While 16 feet is wide enough for the building, it costs so little more, they are usually put up 18 feet wide, thereby having a surplus of room. A building of these dimensions, for any other system, was never dreamed of. Now, you ask, what are the advantages or profits gained by this reduction of room required? Our answer is, first,

## SAVING IN FIRST COST OF BUILDING

For a 3-70-saw public ginnery, on the old plan, where the lint accumulates upon the floor, and the gins of ordinary length, the usual size of building put up is about 30x50 feet, or about double the size required for ours. This adds from 50% to 75% to the first cost of building alone. All this saving of room is accomplished with us, first, by the compact shape in which our gin stands are built, and second, by the fact, that our Revolving Double Box Press does away with the necessity of the room for the accumulation of lint behind the condensers.

There are several other advantages gained by this reduction of room, as accomplished by *our style of gins*, especially in public ginneries, running two or more stands. For instance, three of

common gin, 200 feet up and out, makes 20 feet in length, allowing ten (10) ft. space between them. The same three 70-saw gins of the old style, or any other make, allowing the same space between the gins, would require about twenty six feet, or an addition of 6 feet. What does the addition of six feet involve? you ask. First, an addition of six feet to the length of the gin building, as stated before, which you may calculate for yourself, but which amounts to \$400 to \$500, according to the style and class of building you decide to put up. Second, an addition of the same six feet to your distributor, which means not only the additional first cost of the distributor, but a greater wear and tear of belt, and of power required to run it, which, though very small, is a matter of consideration, and an addition of six feet that the cotton will not pass easily by the distributor belt. Third, an addition of 6 feet to your lint line, which is also you want to use that most valuable feature of our system. This involves not only the additional first cost of the lint line, but an addition of six feet that the last gin has to blow the lint cotton, which is a very important item; for, while a good gin, *properly constructed*, and speeded as to brushes, will blow the cotton this additional six feet, yet it will not do it with the same ease and satisfaction that is the result of cutting off the six feet. Each additional foot in length of common line, causes that much increase of friction of the lint in the line, and unless there is a proportional increase of gins and brushes, it will not work well. Fourth, in running either two, three or four, bolls, with our gins, *the labor of only one man* is required. Now, with three gins of other make, the ginner is compelled to travel six feet every time he walks from one end of the gin to the other, and while this does not amount to much, if done only once, or even a dozen times, yet, when he is compelled to do this from morning till night, day after day, and week after week, it signifies many a weary step, and many miles of hard work during the ginning season. By the use of our gins, all this extra labor is saved, and thereby permits his closer attention to the gins, and a consequent result of more and better work for the gins; and for a row of four, five or six gins, this feature is still the more important.

*The labor saved* by the whole system is too evident to need more discussion. Suffice it to say, that we have two gin outfits, where two men do both the ginning and pressing, and in some instances, where the same labor can run three gins and do the

pressing. However, in the busiest part of the season, it is economy to use two men and a boy. By the use of our Elevator, Distributer, and system of ginning direct into our Revolving Double-box, Self packing Press, all handling of either cotton seed seed cotton, or lint cotton is entirely done away with.

## **THE DUST NUISANCE**

Who has not experienced the terrible effects of the dust and filth, in the ordinary ginning establishment, upon the health and comfort of the operatives? Ordinarily, one who follows the business can last but a few years; at most, and, in fact, but a season or two, unless he has naturally a strong constitution. Experiencing the evil effects of the dust upon the health of the operatives, was one incentive that led to the invention of our system. With our complete outfits, no such results are known, as they are as clean and healthy as any ordinary manufactory, and even more so than the cotton mill. By a proper location and construction of the building, it may be kept as clean as a dry-goods store. The dust and trash are separated to a great extent, especially by our Class B, or best grade of Elevator, and blown out of the gin room. The suction not only separates the dust from the seed cotton, but draws in any light floating particles of dust that may be flying about and expels them from the room, and in hot weather, the heated air is also exhausted, to a great extent, from the upper part of the building, and expelled from the room, thereby making the room dustless and the temperature more agreeable; and as the first period of the ginning season is in the hottest summer months, this is of some importance. The dust fines from our condensers are extended out through the roof of the building, carrying the fine dust and short lint entirely out of the building, while, with the ordinary plan, it is either allowed to fly around the gin room, or spouted beneath the floor, only to make the lower room unbearable, besides causing serious wear on the journals and machinery below. *Our lint* cotton falls directly into the Press box, while with others, it has either to be picked up by hand or swept and tramped around under feet. We use only one condenser for any number of gins, while others use the same number of condensers as there are gins. Even supposing our condenser made no less dust than others

there being only one instead of a number, would reduce the amount of dust. From the above, it certainly is evident that with our system the *business is more healthy and pleasant*.

### CLEANING COTTON.

Yours is again alone and eminently alone in its capacity for cleaning cotton, and it is our duty to show why it is preferable to all others, and why, sooner or later, all cotton will be required to be cleaned before it will pay to gin and market it. And as proof we refer you to the articles on this subject in this book, written by eminent scientists in this line. We will make the bold assertion that our complete system is the only method in existence, for handling, ginning and pressing cotton, that cleans it to any practical extent, and is, at the same time, sufficiently economical and practical to cause its adoption and use to any extent. Cotton cleaners, as such, have been known for many years, and cotton cleaning has been recommended and advised—even urged—by cotton buyers and spinners for many years. But there have been two conditions existing, which prevented its being done to any extent. First, there was not enough difference made in the price of cotton cleaned and that which was not cleaned. But since the attention of spinners has been especially directed to so much badly handled and badly ginned cotton, they are seeking and offering better prices for that which is properly handled, cleaned and ginned. Second, all methods heretofore in existence for cleaning cotton required so much extra labor and expense to operate them that the ginner and planter could not afford to adopt or use them. The farmer was not willing to pay the extra price that was charged to run the cotton through them. The cotton had to be picked up and conveyed to the machine by one hand, fed into it by another, and then usually picked up and carried to the gins by another, and then carried from the gins to the press by still another—all of which involved so much extra labor and expense that it made their adoption and use both impracticable and unprofitable. In some instances the cotton was conveyed to the cleaners by drag belts, or other rude contrivances, but from the cleaners to the gins by hand, or the cotton had to be leveled in the feeders by hand, either, or all of which necessitated so much extra cost and labor for the small amount of benefit

usually added to the staple, or profit gained to the ginner or planter, especially in large ginneries, that it was never adopted to any practical extent. Hence the cry of so much badly handled cotton. Our system not only cleans the cotton from the time it enters the pipe in the wagon or stall until it is rolled out a perfect bale, but does the whole thing without any manipulation whatever. Herein lies the cause of its speedy adoption and popularity in those sections where it has been introduced and is well known.

### MIXING COTTON

There is no subject of more importance to the value of cotton for making strong and even yarn and cloth than that of "mixing." This will be verified by the letters published herein from prominent spinners and carders. They do not want the bale "mix packed," but they want the cotton "thoroughly mixed through the bale." The lack of this worries them to a great extent. We claim that our complete system is the only means in existence of accomplishing this to perfection. Cotton is usually picked by various hands, at various times, from different locations of the field. There will be one basketful of one grade or length of fiber, and one of another, picked and put in the wagon alternately, and all carried and delivered to the gin or stall in the same rotation, and it is then placed or dropped into the feeder, either by basket or otherwise, in quite the same rotation and condition that it comes from the field, fed into the gin in the same order, ginned into the condenser, picked up from the condenser and put into the press, all in just about the same rotation and condition that it comes from the field. Admitting that the cotton will be mixed to a small degree by the several handlings, the chances are that the ginned cotton is pressed into the bale in *very nearly* the same grades and condition that it is picked and brought from the field. Especially is this the case where there is as much as a quarter or half of a bale of one grade, condition, or length of fiber, and the balance of another, as is frequently unavoidably the case with a great portion of the small farmers, who now constitute the great mass of the cotton growing people. It is a very common occurrence for several distinct grades of seed cotton to be brought to the gin in the same wagon, or in different wagons, to go into and make up one and the same

bale. In some localities it is common to carry half a bale to the gin, and wait several days for the other half to be picked out, during which time a rain falls upon it, or a storm blows it out on the ground, or there is a change of some of the pickers, or a change from one part of the field or patch to another, either one or more of these conditions may cause an entirely different grade of cotton to be carried to the gin to finish out the bale. The rains often fall upon it, either in the patch, pen or wagon; sometimes the cotton from one field is carried to the gin to finish another, and sometimes the cotton from one field is carried to the gin by the farmer, has no cotton gin, and is carried to the gin by other means, or the farmer has no cotton gin, and is carried to the gin by other means, or the farmer has no cotton gin, and is carried to the gin by other means, or the farmer has no cotton gin, and is carried to the gin by other means. Hence so much complaint from the cotton spinner on that subject. The spinner complains, but the planter or ginner suffers the loss. It is reasonable to suppose that the spinner finds out what the bale is made of before he buys it, and that he makes all due allowance for these defects, including the labor and expense of separating and properly mixing and cleaning, which has to be done before it is of value to him; and consequently the cotton buyer must make the same allowance, or he will be the loser.

There is no separating, mixing, picking or cleaning machinery that can do this work as perfectly after, as can be done by our complete system before and during the process of separating it from the seed. By it the cotton is carried through so many different mixers, cleaners and dryers, both before and after ginning, that it is necessarily brought to a uniform grade before it is delivered into the bale. As it is drawn through the suction pipe it is mixed to some extent; then, by the distributor, it is carried into the feeders, and stirred, mixed and distributed from one side of the feeder to the other, and if two or more feeders, to each and every one alike, any overplus being carried over the end into a bin to be re-elevated over again at will, so that the seed cotton is almost thoroughly mixed. Yet, in addition to this, our patent system of ginning and handling the lint cotton from two or more gins through one long flue into one condenser and dropping directly into our Two box Press, constitutes a very important and valuable feature in this operation. After the seed cotton has been so thoroughly mixed and distributed into the gin feeder or feeders, and ginned in a superior manner, by which the original shape of the fiber is preserved as much as possible, it is then blown by our



gin brushes (which, by the way, have a greater peripheral speed in proportion to that of the gin saws than those of any other gin on the market), through our long fine, until it strikes the drum of the condenser, whereby the fibers are so thoroughly mixed that it is practically impossible for the finest cotton expert to detect variations in the different grades of lint to correspond with the different lots of seed cotton that were brought from the field.

## **DRYING COTTON**

The ginning of cotton that is wet or very damp is a great loss, first, to the planter, next to the ginner, and last to the spinner. Sometimes to the cotton broker, should he buy it not knowing its true inward condition. When the planter and ginner are one and the same, his loss is proportionately greater. Damp or wet cotton, will neither gin nor sample well. It will soon clog the saw teeth so they will not take hold of the lint, and the brush cannot sweep the lint from them, and the gin refuses to work altogether. The roll will stop or break, the seeds that fall through will be covered with lint instead of being clean, and what lint is taken off and carried through the ribs, is wadded or bunched, snarled or kinked or nepped (as it is variously called) to such an extent, that it is utterly impossible to straighten it into its original shape by any system of machinery without great loss. The saws becoming gummed have to be cleaned, involving delay and loss of valuable time. The seeds not being cleaned, cause loss in "stern out," or yield of lint, and so on. Now what is the remedy? Neither the farmer nor the ginner can stop the showers, which sometimes take them unawares in the field or on the road. Our advice is, do not gin wet cotton. We claim that our system is better adapted to drying cotton than any other, but we do not advise you to make too frequent or severe tests of this feature, especially if the cotton has had a recent shower on it; though some of our customers say they can and do gin cotton which was "soaking" wet, and when it was impossible to handle at all by the old methods.

By placing the cotton, however wet it may be, in a bin, allowing it to remain a short time until it has gone through a sweat or heat (not necessarily very hot), then passing it through our system, it will be loosened, dried, cleaned and ginned in a superior

manner. In short, we do not recommend ginning wet or damp cotton, but where circumstances require it, as is often the case, our system will both dry and gin it to a much better advantage than other methods in use.

### **PRESERVING THE NATURAL SHAPE OF COTTON FIBER**

There is no known mechanical means by which the natural shape of a properly matured fiber of cotton can be improved. If we can only preserve the natural shape, we have accomplished much.

If the cotton has been carefully picked from the boll, after it has fully matured, free from all foreign substances, such as dust or leaf trash, and free from moisture, there is no system of handling that would improve its condition or shape. The above conditions of picking and ginning however, are practically impossible. Even supposing that the cotton was picked perfectly clean and dry, and delivered to the gin, there is no gin in existence that will separate the seed from the lint without, to some extent, bending and doubling the fiber. Under the ordinary conditions in which the great portion of the cotton is put through the gin, and by being forced or crowded, in order to get as much work through as possible, the staple is very much cut, warped, and otherwise twisted out of shape. These deformities are usually called "sneps" or "snaps," and are caused either by the condition of the cotton, the imperfections of the machinery, or by the way it is handled, generally the last two. And while we cannot claim to have entirely overcome these difficulties, we do claim to have accomplished that result to a greater extent than is practiced, if now at all, outside of our system.

Taking the average run of cotton, as it is brought from the field and put through the gin, we claim to deliver the fibers freed from impurities, and as nearly as possible in its natural shape. This is accomplished by the drying and loosening process of our seed cotton elevator to some extent, and by the peculiar construction of our gins and brushes, but in the main by our patent lint flue system, by which, even supposing it to be imperfectly ginned, the lint is taken from the saws and blown for a distance of fifteen to fifty feet, according to size of outfit, and given time to expand from the V or doubled form given it by the saws, back into the

original shape in which it was before taken from the boll. Whereas, with other gins, the flues are only from two to four feet in length, and the fiber is whirled through that short distance so quickly, that no appreciable time is given it to straighten out, and it is delivered in about the same condition as it left the saws.

That cotton fiber is elastic is evidenced by the amount of pressure required to press it into a small space; the pressure required to put 500 pounds into a space 27 inches wide, 54 inches long and 28 inches high is usually about 60,000 pounds, while that required to compress the same down to eight inches in height is about 5,000,000, the variations in pressure required being governed by the amount of moisture in the cotton. The less moisture, the more elastic, and *vice versa*.

In order to separate cotton from the seed by saws, the fiber must become doubled or wrapped in and the teeth with sufficient tension to pull it from the seed, and in the greater portion of cotton, that known as short staple, the lint clings to the seed with great tenacity, so that in order to be pulled off it must be doubled around and pressed against the tooth with considerable force before it will separate, thereby causing the kinks, twists, neps, etc., mentioned before. Now, as we cannot deny that the lint is more or less doubled or bent out of shape by the saws, nor that the fiber is very elastic, we are bound to admit that by blowing it through considerable space, shaking and sifting it about and allowing ample time for it to regain its natural shape before being checked and condensed by the drum of the condenser, the shape of the fiber, as well as the sample of lint, is very much improved.

Only a few years ago, comparatively, the condenser for lint cotton, as now almost universally used, was unknown. The gin was placed on the upper floor by the side of a large room which usually extended to the ground. The lint was blown out into this room, which was required to be sufficiently ventilated to allow the air to escape freely and at the same time prevent the escape of the flying particles of lint. This lint room, as it was called, was from twenty to sixty feet long, and the gin usually located near one end. From the gin the lint was blown and distributed the whole length of the building. The heaviest portion, such as neps and that which was mixed with sand and dirt, would drop near the gin; the extreme light particles, dust and cut lint, would

fly about the room and adhere to the walls or the outlets for air, while that which was blown to the far side of the building was invariably straightened out and cleaned, and was always the best sample. As soon as the condenser was adopted it was placed just in the rear of the gin, as it is now, and the consequence was many thought that the condenser was actually injuring the sample of cotton, when in reality it was only preventing its expansion or straightening out. The most ignorant laborer knew where to go to get the best sample in the lint room.

Our system of handling lint delivers it out as near perfect as is possible. It is all blown through the whole length of the flue, the dust, sand and leaf trash being sifted through the bottom, while the fibers are stretched and smoothed, are delivered into the press box.

### FIRE RISK AND INSURANCE

Hundreds of ginneries are completely destroyed by fire every year. Notices of such are nearly as common in the newspapers during the ginning season, as that of some poor fellow having his hands mangled or arms torn from his shoulders by the saws of the gin. The cause of the most destructive fires in gin houses, is not alone from the exceeding inflammability of cotton, but mostly from the amount of both seed cotton and lint lying around on the floor, flying about the roof and walls of the building as well as being stored in the same.

In our ginneries, neither of these dangerous conditions of affairs exist. Seed cotton is blown direct from the water to a stall direct to the gins, and the lint cotton ginned direct to the press. In case of accidental fire, (which will occur even with the most carefully guarded outfit) it is very easily extinguished. If there be no cotton, there can be no fire—just in proportion to the amount of seed and lint cotton scattered around will be the danger from fire. With other systems, the seed cotton is stored away in bins, and close to the gins, and the lint cotton is accumulated behind the gin stands while tying out the bale, and in case of fire it flashes like powder and instantly spreads over the whole building, generally burning and frightening the hands away, and in a few minutes the whole outfit is in ashes. With ours, there is no seed cotton scattered over the floor, or in bins close to the gin stands,

and no dust flying around and hanging to the walls and, *most important of all*, no lint cotton is accumulated behind the gins, so that *in case of fire*, it is easily extinguished. Many persons have been severely burned by being caught in a heap of lint cotton, either on the floor or down in the press box, as the flames flash and spread so rapidly that it is sometimes impossible to get out of the lint or press box before being seriously if not fatally burned. With our lint handling system in connection with our Self-packing Double-box Press, we certainly do away with all this risk, as there is no lint cotton on the floor, nor necessity of going down into the press box at all.

Owing to the frequency of gins burning, you would hardly realize the fact that, though we have sold our outfits since 1883, there has never a complete outfit burned up, either with our own gins or one used in connection with other gins. We have sold hundreds of them, every one of which, from the first to the last one, as far as we have heard, is still standing unharmed.

*Insurance companies*, through their agents and managers, are paying their attention called to the fact and are beginning to open their eyes. Several years since we began to call their attention to the safety of our system, as compared with others, but they would pay no attention to our assertions. Now they can see for themselves. Some of our customers refuse to take out policies, preferring to carry their own risk than pay the enormous premiums that the companies are compelled to demand from old style ginneries. But, even years have rolled by, and they see the same outfits standing that we put up at first, and those erected each year since, and they see to their own satisfaction that ours is a safer plan and have already in many instances given reduced rates to our customers. However, not as yet to the extent that the present showing deserves, and we purpose calling attention more fully, and to a greater number of companies than before, and hope and expect to secure their attention with a proper adjustment of rates to be in keeping with the comparative merits of our system. Some of our patrons have received rates at about one half that of others, others—who did not receive such reduction have carried their own risks. We cheerfully refer to all of our customers on this point. Many who have lived in dread of fire for years, and at last burned up, have put in our system, and now assert that they feel no more uneasiness about fire in

their ginneries than they do with their residences, or other property. We refer with pleasure to Messrs. Addison & Carnes, of Dallas, Texas, who are experienced insurance agents, also Maj. H. F. Ewing, also of Dallas, who has had many years experience ginning and handling cotton, as well as insuring gins.

### **SIMPLICITY**

To some people this term may seem at first sight inappropriate to our system. But if you will investigate, however, you will be convinced that it is simpler and easier to operate than the old style. Take a two-gin outfit, for comparison. With the old style the cotton has to be taken up from the wagon or bin in a basket, carried to the gin and leveled off in the feeder by hand. Any ginner well knows that if the cotton is not leveled in the feeder so that it will feed the gin regularly, the gin will break the roll and do its work very unsatisfactorily. All this requires an outlay of much labor, but careful attention. With our elevator and distributor, all you have to do is to feed the cotton to the pipe, and it will be carried to the feeder and leveled off perfectly, without labor or attention whatever. The same may be said of the lint cotton. With the old style rig the lint has to be taken from both or all of condensers and carried to the press by manual labor, being careful to take it away from each condenser, or else it will choke up and separate the lint from each and every condenser between every bale; while with ours, all the labor of conveying the lint to the press is avoided, being only necessary to operate the bales in the gin feeders, and the lint will separate itself as it drops into the press. It has been fully and practically tested that any one capable of running an old style rig successfully, can soon learn to run ours. However, if they should be prejudiced against improvements, or old foggy in their ideas, the better plan is to employ a practical, common-sense man, even one who may never have run a gin, but who is quick to learn, and he will soon manage it. We know of such being the case, from experience.

### **DURABILITY**

Ordinarily, a cotton gin outfit is calculated either to wear out or burn out within an average of four or five years; and if you do not wear it out, it will wear you out. Some outfits last much

longer, of course, but others give out no much less time. Our machinery is all built with a special view to durability. From beginning to end it is a cleaner, not only of cotton, but of itself. It takes the dust and sand not only out of the cotton, but entirely out of the building, thereby preventing unnecessary wear on the machinery by the sand and grit, and by giving a steady and positive motion, as is customary with our outfits, causes it to last much longer than the old style.

The sand and grit that is usually mixed with the cotton as it comes from the field soon wears out the teeth of the saws and the ribs, as well as all the journals and bearings. The seeds, nail, etc., that are always more or less mixed with seed cotton, get into the gin and break or bend the saw teeth, the spindles of the brush, and the rollers of the roller, and soon wear out all, as they do in the old style outfits, so that the machinery does not work properly. Either on all of these points, or on one or two of them, the new style outfits and have to be replaced, while with our system the only thing, sand and in fact all foreign substances, being carried out, causes all the machinery to last longer than otherwise.

### BUILDING WITH A VIEW TO ENLARGING

It is a mistake to merely build into a building a capacity for size, namely, with a few wide and tall windows, and a heavy support. The capacity depends upon the nature of the windows, and the present outfit with the standard building will give you more gin in the future. Suppose you wish to enlarge your outfit and to add an addition. I stand here and tell you how you can do it. You can enlarge your outfit for the same size of building and need to build no new windows, or a large window for one window, which would be very flexible and it will be very easy to add a foot in length when desired to put in the other side. Order the elevator, distributor, condenser or one and boiler large enough for the beginning for the three gins, and you will have no difficulty and very little expense in enlarging your two-gin outfit into a three-gin outfit, and so on for any number. If your order is put in for distributor for two gins, with provision for a third one, the distributor would be sent the proper length for the three gin, and then all that would have to be done would be to add to its length. In order to use a three-gin condenser for two gins, it is only necessary to stop up part of the opening left in it for the lint, thus to make

it in two gin flint line. Then to change from a two to a three-gin flint, enlarge the part tapering up to the condenser, and move the other section back to the last gin put in and connect the same flints. This is all done with but very little expense, making our system much easier added to than the old style, which is generally done by patch work, and with great inconvenience.

Build your house for the machinery, and not the machinery for your house. In other words, if you have an old rig and want to improve it, it is best to throw away the old machinery and build your house to suit your new outfit than to attempt to patch up your old machinery and building; though we have, in many instances, adapted a complete outfit of our machinery to the old buildings in use and will continue to do so, where it is to the interest of our customers.

### LOSS OF LIFE OR LIMB

We are not in the life insurance business, but we are willing to assert that the risk of injury where our system is used, is much less than in any other, and inasmuch so, we do not wish to encourage the business of the grocer that there is no danger, for there is no less danger in gin than in gin as well as other gin. A gin is like a gun is dangerous without lock, stock or barrel.

We will not discuss the matter of risk from boiler or engine-bolling or starting, as we claim no special advantage in that respect, though we do claim the opportunities for getting hands and arms mutilated, and frequent loss of life in consequence of the frequent in operating our gins, being fed by our feeding, distributing and feeding machinery, than where the work is done by hand or otherwise.

The very fact that the gins are fed regularly and perfectly by our system, causes them to run more regularly, and without such frequent manipulation and close attention as is required otherwise. They are not so liable to choke up, in which case the breast has to be jacked up or down, or the cotton stirred with the hand as is frequently done with others. The fact is, our gin scarcely chokes at all when properly started and fed by our system. Accidents sometimes occur from raising and lowering the breast by hand as very few gins have appliances for doing this without catching hold of the lower part of the breast, very close to the lower part of the saw. Our gin has a lever with a comfortably



feeling handle, extending out to the right end, sufficiently far from the breast and saws to run no risk of injury from this source while at the same time allowing you to stand in an erect and comfortable position, and doing that work with perfect ease.

Another source of danger is the vacant space that is usually left just under the lower edge of the breast, and between it and the cross timber of the gins. If cotton seeds lodge upon this piece of timber, or notes upon the front edge of the note board, as is frequently the case, the inclination is to brush them off with the fingers. This may be done frequently, and perhaps for years, without accident, but still it does come, at times this can only be imagined by those who have experienced or witnessed it. The rule among ginners is, not to attempt to do these things with the fingers, but to use a stick or something handy. But sometimes the stick is out of place, and as the hand is still in place, it is substituted, oftentimes with awful results.

To avoid this as much as possible, we place this timber as close to the lower breast as possible, then build the lower breast timber with a projection which extends underneath the saws and entirely close the space, so that it is impossible to thrust the hands through, either carelessly or intentionally, without first breaking off a part of the breast.

Accidents sometimes happen from moving the note board, as very few men take any pains to be careful with it, getting the same number of men to do it. Whether or not you do this, another way of doing it consists of one single strong bolt, which is attached to the note board and extended to the front, and middle of the gin, with a handle on the end, by which the note board is regulated to come in, and with perfect ease, and without the least possible danger whatever.

Although the newspaper record only a portion of the accidents which occur almost daily, they record enough to show the need of a system that will lessen these dangers.

In our complete system, the notes and seeds are taken away by a machine, so that as they fall from the gin, avoiding the danger usually run with in removing them in the ordinary way.

### **THE BEST IS ALWAYS THE CHEAPEST**

In no business is this old adage more true and applicable than in the handling of cotton. The fiber is weak and delicate and is

subject to much rough treatment before it reaches its final destination in the woven fabric.

Any system that not only avoids this bad treatment at the gin-  
gill—but improves the quality of the product in every operation,  
should certainly be hailed with joy. This we claim to do from  
beginning to end. Our machinery costs us much more to manu-  
facture than the old style, but we claim that the small addi-  
tional price which we are compelled to ask for it over and above  
the price of the old style, is more than two fold repaid you by the  
various benefits and profits which you derive from its use.

### DRAWINGS AND BLUE PRINTS

We have complete sets of drawings and blue prints, which we  
furnish our customers, or our mechanics, to aid them in setting  
up our outfit. They are on the plan of those shown on pages 17,  
18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37,  
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993, 994, 995, 996, 997, 998, 999, 1000.

Owing to the cost of these drawings and the great varieties re-  
quired, we are unable to furnish them to our purchaser  
free. The cost is so moderate, however, both in Dallas,  
Texas, and Birmingham, Ala.

### YOUR PATRONAGE DOUBLED

We often find our customers anxious to grow with the cotton from  
their fields. The cotton planter needs and must have every  
advantage that can be offered, and if you will take his cotton out  
of the wagon for him, and deliver any of them him in the seed at a  
fair price, on our terms, and promptly, so that he may go on  
about his other business, he will be induced to go to considerable  
amounts to you for ginning and thereby increase your patronage.

### MOST USED WHERE BEST KNOWN

For information, the beginning and rapid development of our  
business is given in the introduction to our catalogue, and a cut of  
the first outfit put up in 1883, is shown on inside of back of cover.  
Although our machinery has been built and sold for seven years,

in the year 1889 about 75 per cent of our sales were made to be used in less than one hundred miles of its home in Dallas. This is owing to the fact that some of the first sales being made and the machinery used near there served as advertisements for the sale of others, especially so with complete outfits including our gins. We have several complete outfits in and near Dallas the results of which compelled the construction of others. Whenever we sell one outfit we sell one or a half dozen in some section or neighborhood the next year, having as many as three or four complete outfits in one small town and frequently two or three in many instances where only a part of our system was run in the first. We have been continually putting in other parts, until now they have the whole system. Many who have put in parts of ours with other systems and have run our complete system here and there have expressed regrets at not buying the whole system at first and say that, if they had it to do over again they would certainly do so.

### **AHEAD OF THE TIMES**

It is sometimes said that our system is ahead of the country, or ahead of the times, that it cleans the cotton too well, and so on. Yet, we were told that many times when we put up the first complete outfit in Texas in 1885. Yet if you will examine the record of our customers and investigate the successful introduction of our system, you will find that it is best thought of, praised and patronized where it is best known. If our system is valuable in one section of one cotton state, why not another. It is true, we had to wait several years after perfecting the system before even the people who saw it, would adopt it liberally. But now as many have tested and proven its merits and superiority sufficiently, it is folly for you to wait longer for the times to catch up. If the times won't catch up, you leave them behind. You had as well lead as any one. Some must lead while others follow. We propose to lead in furnishing the best. Will you lead in buying and using it?

### **STORAGE OF SEED COTTON**

As each person must be governed in this respect by his own peculiar circumstances, we cannot lay down a plan that would

suitable. The location, construction and dimensions of Cotton House depends on the amount of patronage, number of gins, number of taking toll, whether buying the seed cotton or ginning for toll, whether located on a railroad or not, and so on. On pages 12 and 13 of our 1890 catalogue, we have shown plans of a house suitable to be separated from the gin-house, with stalls, to be used at a custom ginmery. But various modifications of this plan may be used to suit circumstances. See also cut on inside of back cover, and other cuts in catalogue. We have drawings and blue prints, showing more completely different arrangements and styles of building, which we furnish our purchasers, after they have ordered and furnished us with their views of what they want. But they are too expensive, and too few of them to supply only to purchasers.

### BUYING COTTON IN THE SEED

Others, however, do not use the best methods of tolling or receiving cotton. They do not know of the suggestions which we could make, and they are not in the same circumstances.

One method of buying cotton, which is sometimes resorted to, is to buy the cotton, and sometimes weighed out of the bin. This method involves considerable expense, as well as delay and annoyance, both to the buyer and farmer. Others give for a certain price, or hundred pounds of lint. Others give for the seed, or a part of the seed, and some furnish bagging and ties. But the best way of all is to buy the cotton in the seed. We admit that this change cannot be brought about at once, but it is fast gaining in popularity. The ginner is ready and willing to accept this method at once, but the drawback is to make it popular with farmers. This is easily done when you show him and prove it to him that you can give him as much for his seed cotton as he can get for it after waiting to have it ginned. It is as annoying and expensive to the farmer to have to wait for his cotton to be tolled and ginned, as it is to the ginner. Time is money to the farmer at this season of the year, and time spent in waiting for his cotton to be ginned, cannot be so profitably employed in gathering and raising his crop. A good illustration of the speedy adoption of a method is that of the fact that a large per cent. of the cotton crop is mortgaged to the merchant for supplies. But this is no real obstacle, as it has been fully proven by experience of those

using our system, that this method is just as advantageous to the merchant, as he only has to enter into the market to buy the seed cotton and send it to the ginner to be ginned. So you see, it is money saved to the farmer, ginner and merchant. Some of our customers with only a limited capital, have adopted this method and find it no trouble to prove these facts to the farmer and merchant, and have created such preference for it among all concerned parties that it would be difficult to return to the old way. They buy the seed cotton and check on the merchant or bank with whom arrangements have been made for the money, and send the baled cotton into market the next day, receive the highest market price for it, and turn the seeds over to the merchant or bank.

It is a rare occurrence now to see one going to mill with a turn of wheat and camping out at the mill until it is ground, as was the custom only a few years ago. Yet, this method of buying the raw material is even much better adapted to the handling of cotton than to the handling of wheat, as you may pick your chances and go to the mill on a rainy day, or dull times, but you are compelled to pick the *fairest day* in your *best season* to take your cotton to the gin. We have always predicted this revolution in ginning cotton, and although the change cannot be completed in a day, yet it has already gone so far that any thinking mind can readily see that it is now a matter of a short time. And although our system is adapted to any method or capacity, both small and large, where it is desired to handle cotton cheaply and profitably, yet ours is the only system by which it can be handled to advantage on a large scale. With this end in view we have clung to it from the small beginning when we had to battle with existing customs, until now when everything seems to point to the fact that we were working in the right direction.

## **HANDLING SEED**

In all our complete outfits we use the exhaust air from our elevator to blow the seed to any desired point. We have recommended this plan in connection with our elevators for years, but not until the last year have they been used to any extent. Our patent vacuum feeder (the same that we use in feeding the cotton out of the vacuum box when distributor is not used) is

plant and grain were collected, and the exhaust from each elevator pipe connected to the lower side of vacuum feeder, by which the seed are raised free the exhaust pipe and blown to any desired point, either to the bin, wagon, car or seed house. We are delivering the seed over a hundred feet in many instances, but the principle applies to handling seed in proportion, which is, the farther you deliver them the more power required. By placing in double flow, with valves on the pipes, the direction of the seed is changed to any distance and varying, then you can raise them to any distance in another into the next house, as you see any other principle at will. Where our vacuum elevator is used a direct delivery can be handled, so that the vacuum simply can be used to deliver seed to any distance, as you prefer, to deliver the seed and no suction is necessary, as you want, sometimes, and you can use only a fraction more of seed. The seed are to be delivered to a certain distance in this way, and as you might have supposed to deliver, that you draw your vacuum as far as you can, and get to see for the same distance with any small additional power. In carrying seed in this manner a portion of the seed which is separated from the seed either is blown back in with the vacuum, or not, to be made as you prefer, as it desired, and you can place in the pipes as many outlets as to separate any of the material that from the seed, though oil mills have them not that purpose. In any case, however, there is no seed in the seed, and this way the vacuum elevator is not used, and a great deal of dust and foreign substances are separated in the different operations that never get back into the seed. We have many of these outlets in operation, giving the best of results. When one of two or more guns, we use screw or other pump, to deliver the seed from the guns into the vacuum feeder, as our regular distributor, with other vacuum elevators. Our method of seed delivery is a vacuum of seed and the vacuum is used to deliver the seed. One system is that you can use a vacuum pump to deliver the seed, and carry your seed in any direction, angle or curve, without the trouble usually experienced with any or all other methods.

Owing to the fact that your seed will be of a better quality, and also that you handle them in larger quantities, you should demand the highest price paid for seed. In selecting your seed cotton, be sure you select the seed. If the seed cotton is wet, it

is stored until in a proper state to run through our suction elevator and dryer, and by always drying them and keeping them so, there is no danger of their heating or rotting, with serious loss to the oil mill, and money is also frequently the case with seed handled in the ordinary way.

Our suction apparatus is free from the rocks and nails and other hard substances that often injure the machinery of the oil mill; notwithstanding they have machines for separating them, they handle the seed so rapidly, in such large quantities, that it is impossible to always make a complete separation.

By this system you can handle the seed much cheaper than otherwise, as you blow them direct from the gin to the railroad car, or to the seed storage house located close to the railroad track, from which they are loaded very cheaply, or you may blow them back into the farmer's wagon.

## **SAVING AND UTILIZING NOTES**

It has always been, and is to this day, the custom either to throw away the notes, or to throw them in with the lint.

These notes are the small laminated pieces which pull through the ribs of the gins, and are covered with short mineral oil. A great deal of the sand and dirt which is brushed down from the lint by the gin brush is also mixed in with these notes, so that as they drop from the gin, they are not very attractive to attempt to derive profit from.

In using our elevator and cleaner there are not so many notes left in the cotton, and they are of a better grade than ordinarily.

However, let them be ever so bad or dirty, we clean and re-gin them, and make from them a grade of lint that sells for a fair price to be used for paper stock, and many other purposes for which a low grade of lint is used. If you buy the seed cotton from the farmer at a better price than he can get for it after having it ginned on the old style gins, it will make no difference with him what is done with his cotton or how it is handled after he has sold it. Hence you will take the notes as they drop from the gin, and convey them direct to a lint note cleaner, which puts them in a proper condition preparatory to being resinned at some convenient time in the future. So instead of either throwing all these notes in with good lint, you should take as much note out

of the cotton as possible, and clean and ginn and sell them to the paper mill; and in this way you will reap a nice profit from what you have previously wasted, besides gaining a reputation for good, smooth sample of lint.

## **ENGINE AND BOILER**

It is good judgment to put in boiler and engine large enough for an increase in your business. If you put up a good ginmery to do public work, and do the best work at reasonable figures, and do it promptly, your custom will certainly increase. This is the experience of our customers. And it is much cheaper to put in sufficient power to meet your future demands than to have to remove it after you find it insufficient and replace it with another. It is difficult to dispose of second-hand machinery of any kind. Be pleased here is no exception, in working, either a boiler or engine, to see it go to the scrap-iron capacity.

The power required to run our complete outfit depends to a great extent upon circumstances, such as the manner in which it is handled, the amount of cotton ginned on a given size outfit, the distance the cotton is carried by suction and amount of cleaning, and so on. The more the cotton is crowded through the gins, the more power required to drive them, and the greater the distance the cotton is drawn, or the seed driven by the air, the greater the power required to do that work and so on. But on an average, say for a bale to ten saws in ten hours, which is the proper speed for good work, the power required is about one and a-quarter horse-power to each ten saws, or for each bale per day, which is seventeen and one-half horse-power, for two 70-saws, twenty-six horse-power for three 70-saws, and thirty-five horse-power for four 70-saws. The usual sizes put in are twelve to fifteen horse-power for one stand, twenty for two, twenty-five for three, and thirty horse-power for four gins, though about five horse-power larger is better, as it allows you a margin of power, and will give you more economy and satisfaction in the long run. The boiler is usually placed about fifty feet distant from the gin building to avoid as much as possible any danger from sparks, either from the furnace or smoke-stack. Large boilers with ordinary long stacks may be placed inside a part of the gin building with very little more danger from fire if properly attended. If placed separate, the steam pipes must be boxed in and covered with some



non-conducting material, ordinary notes or sawdust in an airtight box answering that purpose very well. The engine should be attached to the main shaft, and in our ordinary outfits may be located under the gin stands in the gin building. By so doing power and room is economized, and a better control of the machinery afforded the ginner. A cord should be attached to the lever of the governor, so it may be started or stopped at will by the ginner, without leaving the gins or going down stairs.

Sometimes both engine and boiler are located side by side, at a distance of about fifty to one hundred feet, and engine connected to line shaft and extended to gin house, which does very well. Sometimes they are both placed in connection with the gin building. With our system this plan, though not as safe as when separated, is much safer than the old style, where the seed cotton is stored in and the lint cotton scattered all over the gin building.

Our 8 and 10 gin outfits are operated by automatic engines, and connected to shaft by belt instead of direct connections.

For these sizes special instruction will be given. We have them from the small, plain slide valve ten horse power to the magnificent one hundred and forty horse-power automatic, with all modern appliances for heating and purifying feed water.

## SIZES OF GINS

Many years ago small gins, from 40 to 50 saws, were mostly used, as they were run by horse power, for which that size gin was best adapted. After the small steam engine was introduced into the ginneries the larger sizes, such as 70 and 80 saws, at once came into demand. But after a few years use of the large sizes, being run by steam power and often at a break neck speed, the saw and brush shafts began to wear out of round, consequently out of balance, springing and rattling, thereby giving much trouble and annoyance and necessitating frequent repairs, until gradually many practical gimmers abandoned the long gins and replaced them with smaller and shorter sizes. But when our gin and system came into market it created still another revolution, as it were, and re-instated the 70 saw as the popular size. The bearings on our gins are on the inside instead of the outside of the driving pulleys, making the distance between them less, and consequently the shafts less liable to spring or rattle, or get out of order. And being only two, instead of three, the journals are



our 70-saw gins with five men; and while our gins may be crowded to even greater capacity, yet we wish it understood that our greatest aim is to produce a gin that will turn out the *best grade* of cotton with the *least labor* and *greatest profit* and satisfaction to our customers. We have seen as many as fifteen bales ginned on one gin in daylight, but this proportion cannot be carried out where a number of gins are used, besides the work is always poorly done and a great loss entailed by such overloaded machinery.

### VARIOUS RESULTS FROM OPERATIONS OF GINS

Taking the ordinary 50-saw gin as a sample consisting of the saws, brush, rakes and rollers, it is quite impossible for one and the same gin at the same time to be the best in all particulars; that is, to make the best sample, best turning, gin faster and take less power. The same result is seen on a speed of one and one-half gin, the following rules apply, and so time without argument.

1. Adding or speed detracts from sample and yield a certain limit.
2. The cleaner and lighter the power, the sample and yield will be better.
3. The higher the speed the cleaner the yield, but at the expense of sample.
4. The higher the speed the cleaner the yield, but at the expense of sample.
5. The higher the speed, the cleaner the yield, but at the expense of sample.
6. The higher the speed, the cleaner the yield, but at the expense of sample.
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The lower the speed, the cleaner the yield, but at the expense of sample.

The higher the speed, the cleaner the yield, but at the expense of sample.

Any good 70-saw gin at 1000 revolutions will do well. The same gin, by tightening the rollers and increasing the speed, will run twelve bales out to the detriment of the fiber.

The high speed retains the seed in the boll, and gins cleaner, but to the detriment of the sample and so on.

### PRESS POWERS

Our Double Box Presses are fitted up and running with either

screw, hydraulic or steam cylinder powers, but unless otherwise ordered, we always supply the 5 inch screw power. The most valuable feature of our press, is that of the double revolving boxes, by which a continuous operation is acquired, by ginning a bale into one box while the other one is being pressed out. We have our Double Box Presses with screw power doing the pressing with perfect ease for four gin stands, and we guarantee it to do the work for six if desired. The screw, when connected and operated with our Double Box Presses, does away with the necessity of a great deal of turning up and down. By having the Double Boxes, you avoid any loss of time between bales, the screw being the cheapest, simplest and strongest power yet introduced, induces us to turn to that power in most cases. However, we furnish either hydraulic or direct forcing cylinder when desired. With the screw power, the foot can be run up and tied out after steam has run down to a low pressure, while with our hydraulic cylinders, the foot head of steam must be kept up until the last bale is tied out. We use the steam cylinder to do our tramp work, and then switch to a pump, where the ginning ceases; and consequently no extra head of steam is required after the work is finished.

Our presses are also equipped with efficient tramps, which will tramp any bale of lint, and will also tramp any cotton being and will clean the rollers, which will make any weight from 100 to 1500 lbs. of cotton, and will clean the rollers.

## **ADVANTAGES OF OUR DOUBLE BOX**

Suppose our double box machine to run up and turn over two bales of lint, and then to run down and turn over eight bales to run it up and down. Now, with the Single Box, you have to put the lint into the box, in a same manner as the way is even more disagreeable than turning it over the foot. Then after you have the bale in the box, you run the screw up and out the bale, throw it out, put in the original and run the screw down again; during all this time the lint has been accumulating on the floor. Then you must commence and put in this bale of lint into the box by getting up, taking up a great deal of valuable time, and perhaps the lint will be so tight, that you will not be able to get it up, and consequently you will have to use a great deal of force.

But upon the other hand, with our Double-Box, instead of wait-

ing for all this work and delay, as soon as the screw is down, all you have to do is to revolve the Press Boxes and start it right up again, losing not a moment's delay in putting the lint into the box, giving you ample time, even if it takes your screw five minutes to run up and five minutes to run down, which would give you five minutes to simply put on the ties, and this is ample time even with a slow hand. That would make four bales an hour or forty to fifty per day, with a slow screw and a slow hand. With a good screw power and a quick hand it can be done in ten to twelve minutes for fifty to sixty bales in ten hours. The same figuring applies to extra mule power or steam glider. The Double-Box doubles the capacity and lessens the labor, fire risk, and room required with any kind of power.

### TRAMPING COTTON IN THE PRESS

Every one knows that of all the work about the gin there is none so disagreeable, laborious and unhealthy as handling and tramping the lint. All we have to say is that our Packer will do it practically and successfully.

After several years of labor and careful experimenting we have a perfect Cotton Packer adapted to either, especially to our Double-Box Press. It is a useless waste of words to mention the necessity for economy advantages gained by the use of such a machine, for every one who has had any experience with ginning cotton knows that well.

One benefit derived from using the Packer even on the small cotton, is that in the beginning and close of the season all the work, both ginning and pressing can be done by one man doing away with the usual necessity of hunting all over the country for hands to pack out a few bales of cotton, or keeping a lot of hands employed when there is not enough ginning to justify it.

## COST OF BUILDING AND OPERATING

### OUR COMPLETE OUTLET FOR PUBLIC GINNERIES.

We will explain the plan upon which you can *locally, conveniently, and operate* our ginneries.

### LOCATION

A good location should be selected after a thorough investigation of the country, and the following are the principal considerations to be kept in mind:

1. The location should be centrally situated.

2. The ginning should be done as close as possible to the future market. The more remote the location, in which the amount raised is not sufficient to cover the cost, then the income is yearly decreased, and the cost of the fertilizer, the natural fertilizer, which are the main products, the cost may be increased and brought to a point where it is not profitable.

3. The location should be near a good water supply.

4. The ginneries should be situated in a convenient and pleasant place, where the ginneries can be properly and conveniently managed, and the ginneries should be built in a place where the ginneries can be built.

5. The location should be near a good water supply.

6. The location should be made with railroads before can be made with railroads.

7. The location should be made with railroads before can be made with railroads.

8. The location should be made with railroads before can be made with railroads.

should be made with the company for economically compressing and handling your bales.

## **COST**

The amount invested in your plant should depend entirely on the circumstances of the case, such as the amount of cotton raised in the section of country contiguous, the prospective amount to be raised in the future, the number, capacity and quality of gins in the vicinity, etc.

### **A FOUR SEVEN-FIVE-FOUR.**

Lot, building and fence, scales, engine and boiler, shafting and pulleys, belting, four 75-lav. gins, feeders, condenser, flues, self-picking double belt press, suction elevator, cleaner and distributor, will cost about \$6,000. Capacity, 50 bales in 24 hours, 750 bales in 25 days. Of course these figures limit the lot and buildings to cheap location and material.

## **THE MACHINERY**

An outfit of fair machinery costing \$4,000, which includes engine, boiler and all shafting and belting, will gin 3,000 bales of cotton during the ginning season. The lots and buildings would be added to that, and the price of them would vary with different localities. But on an average \$6,000 will complete an outfit that will easily gin 3,000 bales of cotton during the ginning season of say four months, without crowding the machinery, doing good work and improving the sample instead of injuring it.

## **THE BUILDINGS**

May be framed and covered with crimped or corrugated sheet iron, the dimensions, construction and relative location of same being governed by circumstances, such as capacity of machinery, amount of cotton stored and size and shape of lot. We have some gin houses of brick, but the iron is generally used, being much cheaper and about as safe with our system. But don't forget to look out for comfort, as far as practicable, and locate your gin building with gins fronting south, if possible; or, if not, east or west comes next. The beginning of the ginning season is usually very hot and the close very cold weather. By locating the gin building as above you get the benefit of the south breeze

in the hot weather and may be shut off from the north winds in the winter. All these little comforts may not amount to much to you, you may say, as you may not intend to be in the gin house much, but everything that tends to make the ginnery more pleasant and agreeable will enable the workmen either to do more work or to work for less money. Have as much ventilation from the south as possible and as little from the north. Manage to have the press on east or west end, to suit your convenience, but be sure not to have the door thoroughly closed the bale is rolled, on the *north* side, else the brisk north winds will scatter the lint cotton as it falls from the condenser into the press.

### EXPENSE OF OPERATING

This, of course, depends also to a great extent upon circumstances.

*The larger the power the less expense will be in proportion to the amount of work executed.*

One man can operate our machine for one bale. The same man can run five on our system.

It usually takes a minute to do the overhauling of one bale run and the same man can very easily do the same work for five.

It takes one man to tie out the bales for one run and the same can tie out the bales for five runs.

It takes one man to fire a boiler for one run and the same man can fire a boiler for five runs, and so on.

The amount of skilled labor required to operate our system is less in proportion to the amount of work executed.

This is exactly the case with a flour mill, is it not? We answer, for the same reason that it takes a few minute or skilled workmen to operate a flour mill, for instance, that is fully equipped with a full set of improved machinery for elevating, cleaning, distributing, grinding and packing the wheat and flour, than would be required to do the same work with rude or old style devices, or with no device at all, as is the case in most cotton ginneries.

Just so, when our system is properly constructed and placed in the gin house and belted up, it is easier to look after it than to do all this work with rude and imperfect devices, or with no devices at all and have to handle it by hand.

The fact is, we find it generally safer to secure a trustworthy



practical common-sense man who has had some experience with any ordinary machinery, than one who has had much experience with old style outfits. For it is sometimes possible and even probable that you would secure one so old-fogyish and "wedded" to the "old style" that it is more difficult to train him into the new from the old, than to teach the new man from the beginning. There is usually required to operate

A FOUR SEVENTY-SAW OUTFIT,

One book-keeper, weigher and buyer combined

One ginner,

Two pressmen,

One fireman and engineer combined

One roustabout, feeder, etc.

Total, six men.

### **SOME POINTS FOR PROFIT**

It is not expected to convince any one of the merits of our system by argument alone for it is expected that each and every one who will be induced to read this with a view of investing will make a thorough investigation from an outside and unbiased standpoint.

Yet it is the intention to point out some of these advantages, and then you may investigate in detail. Suffice it to say that the success we have met in disposing of our machinery, and the universal satisfaction that it is giving to those who have bought it and are using it in the place of other machinery, which they have thrown out and abandoned for the purpose of adopting ours, should, in itself, be very strong evidence of its merits.

### **PRICE OF YOUR LINT ADVANCED**

Your plant should be built with a special view to making the best possible grade of lint and obtaining therefor the highest possible price. To that end, the seed cotton should be properly graded, placing the mixed, with a great quantity of foreign substance, to itself and that which is damp or wet to itself, allowing it a sufficient time to arrive at the right condition to go through our *cleaning and drying machine*. There is no one thing more sadly neglected than this matter. There is as much good cotton ruined by ginning it wet as in any other way.

The cotton mixed with dirt and bad trash to any great extent

may be separated from the seed, ginned, and even cleaned running through our Cleaner, the cotton will be improved from one to three grades. Yet it is best to separate the different grades before going through the machine to get the best results.

THE GIN SAWS should be given a regular speed, and not sufficiently fast to *break, tear, or cut the fibres*. Sand is a cause of cut lint also. By cleaning the sand out we avoid this entirely.

The *delinted cotton* has also been found to be full of the minute, short fibres.

If the *delinted cotton* is not cleaned, it will be full of some particles of sand, which will be carried on the roller to the saws.

The *delinted cotton* is also full of seed, which is a view for another sample of *delinted cotton* to be made, which is too much to do with *delinted cotton* in the *delinting* machine.

(There is a considerable opposition to the SAW GIN. The trouble is not only can be seen with the *delinted cotton*, but with the way they are *delinted*.)

Instead of holding the seed in the seed box until they are fairly "skinned," the proper way is to let them be "skinned" by good lint rollers, and then.

In order to receive the seed in the seed box, the roller should be in the roll to receive the seed, and not in the roll to receive the lint. The proper way is to let the seed be "skinned" by good lint rollers, and then.

This is all done for the purpose of getting *quantities* to the detriment of the *quality*. The *delinted cotton* is *delinted*.

How *delinted cotton* is *delinted*. By handling the staple as it should be handled, and then claim the proper difference in the price of the lint.

By all this improper handling of cotton a few more pounds of short lint is obtained, while, when none, the quality of the staple many times the value of the amount gained.

The weight of the short staple, added to the specks cut from the seed, even supposing it to amount to 20 pounds, at nine cents, only brings \$1.80, while the injury to the good staple by being thus dragged in with this worthless short staple and cut lint is much greater than that gained in weight.

This is a big price for the spinner. He experiences the evil effect of mixing this short, inferior with the good. It is troublesome and expensive to him, but he is entirely unable to remedy it, (unless he will make a proper difference between staple handled as it should be and that butchered as it is generally done).

Your object should be to show the superiority of your staple, and thereby create a demand for it at a fair price.

The spinners are now ready to make this difference. By reading the article in our new pamphlet, you can see that our remarks are fully justified by the leading spinners of the day. And when the market is properly established with the spinners that you may judge that the identification of the dust, sand, leaf trash and other impurities is a very necessary movement to preserve the value of the staple. Then you will command a ready sale for your staple.

Again, in our system, you should wrap the bale in such manner as to protect it from the weather, and at the same time to prevent any waste.

Furthermore, you should have each bale marked and numbered in such a manner that the tag cannot be detached.

This tag should give your name, the number of the bale and date ginned. In this manner you will establish a trade mark, as it were, so that any one will know from whence it came, and you can safely guarantee each bale with your brand on it to be true throughout, as is projected on the outside.

Again, in our system, the lint is not handled at all or swept over the floor, or trampled under the feet of the operator, as is customary with all others, which is also injurious to the delicate fibers.

Furthermore, you will have no remnants of lint piled up in the corners of the pressing room to gather dirt, as is so often done in the ordinary gin-house establishment, and which is another cause of some of the mixed, packed bales.

All of these little precautions amount to a great deal in the profits of the business.

## FROM AUTHORITIES ON COTTON.

We refer you to a few articles from the following authorities :

1. Manufacturer's Review, 1887.
2. Textile Manufacturing World.
3. Manufacturer's Gazette.
4. Industrial Reporter, April, 1888.
5. Manufacturer's Review and Industrial Record, June, 1888.
6. Industrial Review.
7. Textile Record.
8. Manufacturer's Record.
9. Hon. Edwards Atkinson.
10. New York Cotton Exchange.

These articles are mostly from cotton spinners and carders, who handle the cotton after it is put into the bale and taken to the cotton mill. Some of them have been written very recently, and others several years since, but they all point to the same conclusion. We have culled these from a host of others, which we have in our possession, from various authorities over the United States, to whom we could refer you, but they would only reiterate the general verdict of those which we have produced. We have been watching these demands from the cotton mills for a number of years, and have been constantly striving to attain, and think we have now reached, that perfection in our ginning system sufficient to supply this long felt want.

We have continually noted the various defects in the method of handling seed cotton in the South, as pointed out in these articles, and have been as constantly pursuing steps to overcome them and offer a perfect system in their place. Our labors have been in the field, in the gin, and in the cotton mill. We have listened to the farmer's story, to the ginner's statement, and to the spinner's complaint. We have heard them say: "Don't clean my cotton, I get as much for the dirt as I do for the cotton; all I want is spun out;" in the seed, clean whether the sample is good or not," and so on; have seen the ginner pull the crate board front until all of these impurities were carried on with the lint.

Which fault was it? That of no one person. It was the fault of neither the farmer, ginner, cotton buyer or spinner, but of all of them combined. The spinner complained, but still did not make the proper difference between good and bad cotton. The ginner and farmer took no pains to urge the proper difference. The spinner called for cotton cleaners and better gins. They were tried, but soon abandoned, as the extra amount of expense and labor necessary to do this work by old methods were not repaid by a proper difference in price. All this time we were constantly perfecting a system to do this work with very small extra first cost, but with even less labor than that attached to prior methods. *Now the spinners demand better methods* of handling and ginning cotton; they are willing to pay the proper difference, and now we stand ready with a complete and perfect system to supply the demand, one that has been tested for seven years with a constantly increasing demand and popularity, doubling its sales each year, and proven to be the very thing to fill the bill. We have been constantly watching and studying the wants and perfecting a system to supply it. Now we offer it with renewed confidence, realizing that our labors have not been in vain. We offer it as the boon to the farmer, the health and profit to the ginner and the satisfaction to the spinner.

We have stood alone in the field from the beginning, no one having or offering anything to compete with our complete system. When we ventured to build the first outfit in 1883, complete in principle though rude in construction, the cry was against us, so far as cleaning and preserving the cotton was concerned. All applauded the great saving of labor and other meritorious features, but condemned the fact that it cleaned and improved the cotton. But this objection has been overcome. The cotton from our system is recognized the world over. The cotton buyer, cotton yard master, public weigher and the compress men all recognize it by the touch.

These are facts which can be proven by those who handle the cotton prepared by our complete system, as well as by those who use it.

# THE MUNGER PATENT COMBINED SYSTEM OF COTTON.

(From Manufacturer - Review.)

To insure greater strength in cotton yarn, we need, and must have, less broken fiber, and more uniformity of length and diameter of fiber, and freedom from all impurities and foreign substances of every kind, including excess of water, which causes mildew and rot.

During a long series of investigations of the causes of imperfections in cotton fibers and the unevenness of slivers in mill processes, and the various causes of imperfect yarn, I have referred to many causes of bad yarn and made some suggestions for remedies, but of all the various imperfections I have referred to and the necessity of improvement in methods and machinery, there is *nothing now* in the present advanced state of cotton machinery *of more importance* for the perfecting of yarn than *the more perfect condition of raw cotton*. In a recent article I referred to the examination of individual threads, by taking out the twist from many sections and carefully examining the little slivers to find the causes of imperfections. The glass revealed so many cut and mutilated fibers, together with neps made from looped and torn fibers, *which had their origin in the bad condition of the seed cotton before it entered the saw gin*, that I determined to make an effort to investigate and in a faithful manner present this very important subject to the attention of cotton raisers and parties interested in the manipulation of this valuable staple, for the manufacture of fabrics for the millions of people in our own and other countries.

While we acknowledge many of these imperfections are due to the mills, the great and very important fact remains, the necessity of greater care in cotton culture. In picking, none but matured bolls should be taken; in the care and protection of the seed cotton; in the inspection and assorting of the various grades of length and diameter of fiber which is presented to us with force at every minute examination of some grades of raw cotton, and more especially in such examinations of yarn as are referred to above; in recent examinations of yarn in which I have found frequent fine and coarse places, the coarse bunches or places were made up largely of *short but and notes, precisely the same as we find in imperfectly ginned cotton*.

In addition to the examination of the slivers with the twist

taken out, the single thread tester was used on short lengths, selecting the class of fine places examined by the glass, and they broke at from three to six ounces. At five ounces to the single thread, it is equal to 25 lbs. to the singlelea of 80 threads, when it should break at 57 or 58 lbs. for No. 28 yarn to insure success in the weaving. With a good, well-matured, well-ginned New Orleans "bender," we frequently find an average of 12 to 13 ounces. At 12 ounces we have 60 pound strength to the lea, or  $3\frac{1}{2}$  per cent above a very high American standard for good yarn.

The above yarn from imperfectly ginned cotton broke at 55 per cent below the same standard. This will be called an extremely low grade of yarn. It is, but if the reader will examine many samples of the lower grades of cotton, from ordinary to low middlings, he will find much fiber in the condition described by a faithful committee appointed a few years ago by the Louisville Cotton Exchange to examine and report upon the ginning of cotton. The committee found the *best results* with 10 inch saw at 300 *revolutions per minute*, but with an increase of 150 revolutions, the lint and chopped material was largely increased.

At the highest speed the cotton was pronounced to be of little market value. In the lower grades of cotton much worthless fiber and lint is found, and when there is but a small proportion of such cotton in a mixture, the result is what I have found and presented above in proportion to quality of the mixture. It is a difficult operation to take the fiber from the seed in perfect condition, and this fact increases the force of the argument in favor of the greatest possible care of the seed cotton after it is picked preparatory to ginning. If to the short cut fiber and lint there is added much fiber that is immature, then we have the foundation of short, weak, fine places in the threads, and a slipping condition that will not draw well, and the color will not be uniform in the prints, as in any class of goods dyed.

For the year ending September 1, 1886, the cotton crop of the United States is given at 6,000,215 bales, of 440 lbs. per bale, and the value of cotton products manufactured is given nearly \$241,000,000 for 1886. If we take the value of raw cotton exported in 1886 alone, \$205,000,000, it would seem that that of itself would be sufficient to stimulate cotton raisers to improve its condition, if possible.

*To insure greater strength in cotton yarn, we need, and must*

*measures, as the weight, the number, the covering of longer and shorter seeds, the shape, the length, softness, and freedom from all impurities, the number of seeds in every head, including excess of seeds, and the nature of the weather.* Bad weather at the time of picking, and unfavorable climatic conditions during some seasons are a serious obstacle to good crops. Even on these causes all must suffer who are dependent on the raising or obtaining of the product. Good quality of New Orleans fibers are estimated to average a  $\frac{1}{4}$  inch more than one inch long, and to be  $\frac{1}{16}$  of an inch in diameter. By careful counting and weighing, I found about 30,000,000 seeds in a pound of fine well-ginned Texas cotton. The number of seeds in a pound of cotton will vary largely with the diameter and length of the staple.

The most beautiful cotton raised in the Sea Island. Good Egyptian cotton is of the same grade and classification. Sea Island is a soft, silky fiber, which is well ginned. In good specimens the twisted convolutions are quite uniform and the epidermis more fine, soft and cotton was said to be quite uniformly supplied, which gives it a peculiar soft, silky feeling. A recent writer reduces the number of varieties to eight, and is of the opinion that these can be reduced to four, viz., *Gossypium barbatum*, *Gossypium arboreum*, *Gossypium trilobum*, and *Gossypium barbadense*. *Gossypium barbadense* is represented as a branching plant growing 10 feet high or more. Mr. Richard Marsden, in his excellent work on the 'Cotton Spinning,' describes this variety as follows:—The cotton-pods are hairy, the seeds are numerous, free, and covered with green down under the long white wool. It is probable that this is the original of the green-seeded cotton, now so extensively cultivated in the Southern States of the American Union, and which forms the bulk of the supply from that source. In the variety of cotton the green down not only adheres to the seeds, but the longer hairs or fibers adhere quite closely, and this is one of the causes of much mutilated and ginned fiber.

#### OTHER REMARKS.—CAUSES.

It must be borne in mind that much *injury is done* to the crop by *sudden violent wind and rain storms*, which are often severe in hot climates. In such cases the planters cannot be regarded as being *culpable* in any way, nor can they be prevented by the utmost care. *The planter suffers loss to some extent in such cases by de-*



preciation of the market value of his crop. If the seed cotton is left exposed to the rains and in a dry season to clouds of dust, and some of it is trampled in the earth, the saws of the gin can not be kept in good working order, long, because of mud and sand. If too damp, the fiber will be "hooked," lacerated and broken, and much loose, short staple rolled into neps.

I have this day examined a new card, combining several important improvements, which was working well yesterday with a good quality of cotton, but to-day with a lot of gin-cut cotton, the slivers are full of imperfections. *The comparative loss in quality is estimated at 10-25 per cent.* The above extremes in conditions of the *seed cotton* when it entered the saw gin. There are other causes of hooked and imperfectly ginned cotton, but the loops found in the above named card are evidently the result of wet seed cotton at the time of being ginned.

For the purpose of ascertaining the value of a card presently in possible and the percentage of gin-cut cotton, I have procured fresh specimens of today's crop and of other cotton, and have carefully weighed a few grams, then by the aid of a good glass have sorted the short gin-cut from the long staple cotton. I have lost 15 per cent. of short and worthless fiber. The loss of the short from the long we doubtless lost some that would be taken out in some of the processes. This loss would amount to three cents a pound on cotton costing twelve cents per pound. In addition to the above the heavy neps and lint would amount to about one cent per pound more. The sample of gin-cut cotton before me is badly looped by hanging to the saw teeth, and is polished and the twist straightened from the fibers by the friction against the sides of the gin outlet. These small loops are found in the cards. If the card cylinders are large and their periphery surface runs at high speed, the fibers of these loops are sure to get broken up and help weaken the yarn. The minute size of the cotton fiber would seem to be sufficient to warn us not to permit so much severity in manipulations as it is subjected to in the various mechanical operations. Dr. F. H. Bowman, in his very thorough and valuable work, "*The Structure of Cotton Fiber*," page 23, says: "We may have some idea of the tenuity of the cotton fibers when we remember that 14,000 to 20,000 individual filaments of American cotton only weigh one gram, so that there

are about 140,000,000 to every pound, and each but only weighs on the average about the  $\frac{1}{4,000,000}$  part of a grain, and if the separate fibers were placed end to end in a straight line, one pound would reach 25,200 miles."

The above number of millions of fibers to the pound is larger than is mentioned in another place, but this result will vary much with the length and diameter of the fibers. But we have enough to show us the deficiency of the little staple, to warn us and managers of cotton-gins to be careful in the manipulations to leave their product in a good valuable condition for the markets of the world.

Since the annual mill production made up with from 12 to 25 per cent. waste, having some with low grades of yarn not equal to 24 per cent. of the strength of the fibers, we have good reasons for accepting the subject to the board of progress and improvement, and endeavoring to improve it.

ALFRED W.

## IRREGULAR YARN, ITS CAUSE, AND HOW MUCH OF IT MAY BE AVOIDED.

(PART OF THE TEXILE MANUFACTURES WORLD.)

It is amusing, to say the least, to read many of the reasons that are given by some of our well known in our textile papers, for irregular or uneven work. Most of them have their eyes on any of the departments, aside from the one in which they are employed. The majority of them point to the picker room and card room, the overseers of these departments come in for most all the blame, but one wonders how it happens, that picker men, or carders, should be so remiss in their business, in these enlightened days on cotton manufacturing, or to be the cause of so much general trouble in our mills, especially when we have had all the evils connected with picking and carding cotton so elaborately set forth in books, and in all the journals of the day, wherein these heads of departments may exchange their opinions, and give each other all helps necessary for the best management of these two parts of cotton manufacture.

I wish to take an independent position from my own practical experience, and will consider not only one of the places, but all. We will commence at the first and trace through until we get at

that part which hits our corn, no matter which department we may be employed in. And now, long before we get to the mill, away off

#### IN THE COTTON FIELD,

frequently the fault is found, through circumstances over which no man can have control, for the cotton crop is subject to the various changes of weather in the places where it is grown; that is, if the weather is not favorable, the cotton cannot mature as it should, and the fibers are weak, have not attained that corkscrew form which makes it capable of intertwining and uniting in a firm, elastic thread, as it would if well matured; and though the class of cotton may be of a good stock of seed, like all other of the vegetable or plant kingdom, if not properly matured, cannot be of the same market value. Then there is the picking of the cotton. When the bolls of cotton of different stages of ripeness are too wide apart and mixed together, we cannot expect them to make as good and even work as if there was more care in the selection.

Sometimes, on small farms, they are so mixed together, that they produce little or no money,

#### THE PICKING PROCESS.

If neglected and in sampling such bales it is quite possible to take out a handful of nicely picked, when the whole of the bale may be terribly mixed, hence irregular yarn. Then there is the ginning process. We know this part of the cotton business is not carried on by a very high paid class of help, and by inattention and inability to manage the machine properly, the fibers are badly cut by the saws; thus, no picker or ginner, with the very best men to charge, can make into good, even yarn.

Then there is the feeding of

#### TO THE MILL.

to the opener, this is frequently not the fault of the picker over-looked, for he cannot always have his way, but has to make the best of the advantage the mill affords, which in many places are very limited.



## RADICAL CHANGES ARE NECESSARY.

[From the Industrial Reporter, April 1907.]

Another writer to a Southern paper, signing himself "Carder," points out to the Southern cotton-growing and ginning interests the urgent necessity for greater care in sending cotton to mills. He estimates the loss in working cotton on picking and carding 209 bales of 150 pounds to the bale, at 100,320 pounds. The loss on this particular invoice of cotton was as follows:

|                            | POUNDS |
|----------------------------|--------|
| Sacking, . . . . .         | 2,950  |
| Hoop iron, . . . . .       | 1,845  |
| Cotton seed, . . . . .     | 1,174  |
| Fan waste, . . . . .       | 995    |
| Card strippings, . . . . . | 2,105  |
| Oily card, . . . . .       | 888    |
| Floor waste, . . . . .     | 318    |
| Battling, . . . . .        | 974    |
| Amount                     | 10,806 |

The total loss amounts to 34,906 pounds, or 154.2 pounds per bale, or, at nine and one-half cents a pound, or 3,184, and on 209 bales is \$1,127.72. On the export of our crop of 60,000 bales, the loss is \$1,650,000, a loss which is attributable, the writer ineffectually sought to show, *to the lack of interest in the gathering, ginning and compressing of our cotton and in carding, mixing and picking. Competition will very soon force a reform in this line of our cotton industry, and the only way to enable the demands for better and improved*

### Uneven Yarn: The Cause of It: Observations from the Gin and Compress to the Loom.

(Manufacturers Review and Industrial Record, June, 1907.)

It is a well known fact that good, even cloth cannot be woven with poor yarn. What I mean by poor yarn is this: a yarn rough and full of dirt, uneven in numbers and full of uneven places, with the breaking strength not up to standard. The question is often asked by spinners and weavers: "What makes the yarn so weak, or why is it so uneven in numbers?" It is the purpose of the writer to discuss these points, and in doing so, to endeavor

why poor yarn is made, and in order to do this it will be necessary to cover considerable ground. In the first place, it will pay us to devote a short space in this paper to the processes of ginning and compressing.

Previous to the civil war the cultivation and preparation of cotton for the market, both home and abroad, received systematic and careful attention. Then the cultivation and picking was looked after closely by the planters and their overseers. Since the abolition of slavery, however, the order of labor has taken the place of the old system. The negroes are now paid on a lot and gathered without regard to the quality of the cotton from small plantations, and the seeds and trash thrown together promiscuously into the receptacle. The seed cotton is sent to the saw gin. The cotton is piled up in a corner, and whenever this cotton is gathered up it is very dirty, especially so the fibers. Cotton gins have been introduced, the process of ginning ought to be completed before the cotton is ginned, when the saws strike them the seeds are forced out of the cotton fiber, the seeds popping out as they pass, when the cotton is carried by a current of air into the chunder or where it settles ready for bagging. If the seed cotton is ginned damp, the seed cannot be so easily dyed out of the fibers, and very many of them will not fall into the receptacle prepared for them, but will pass into the pile of cotton. A certain amount of cotton seed, sand, leaf and trash will always be found in cotton, although receiving the best treatment, but the amount is enlarged when the cotton is ginned while damp.

Another common objection is the loose way in which cotton is fed to the gin, and so a heavy, unassistent help. A gin never ought to be forced to run fast. When carrying too heavy a load the speed will fluctuate, and the cotton, when forced through, will be pulled out. From this careless method of ginning an irreparable loss is sustained in manipulating it through the mill, not only in an excessive waste, but in weak and tender yarn as well. Cotton gins, when run at a high rate of speed, will cut nip and mutilate the fibers while being separated from the seed.

The natural variation of the fiber, careless packing and fraudulent mixtures render the task of the cotton buyer exceedingly difficult, and one which requires the most experienced circum-spection and careful discrimination, if an even quality of yarn is

to be produced from it. It is not safe to intrust the mixing to ordinary mill operatives, and yet this is too often done.

One of the worst features about adulterating cotton is that of mixing sand with it. For the last few years the brokers have looked after this so sharply that the percentage of sand has been very materially lessened, still there is enough to seriously affect the safety of the staple while in the process of compressing. When we take into consideration the fact that a bale of cotton of 450 lbs. net weight receives a pressure of 5,000,000 lbs., it can be very readily seen that cotton fibers must lie compactly. The object of the compressing is to reduce the size of the bales to the least possible dimensions, so as to occupy the smallest space in railway cars or vessels. Some of the latest improved compresses reduce bales which are ordinarily five feet long, four feet thick and twenty-eight inches in width to a bale of six or seven inches thick. The compressing of the bales is done very quickly. Now with this severe pressure brought to bear upon the cotton fibers, *with more or less sand distributed through them*, they must, to a certain extent, be cut and torn. Cotton fibers are of too delicate a structure to receive such a strain upon them without injuring them to a certain extent.

### Cotton—A Valuable Industry—Points of Interest Pertaining to Gathering, Ginning and Baling.

#### General Industrial Review.

The manufacture of cotton yarns in the United States has become one of its leading industries. It is now estimated that upwards of 44,000,000 spindles are now driven either by steam or water power. These spindles are productive both cotton and woolen yarn. I think it is safe to say that 8,000,000 of these are utilized in the manufacture of cotton yarns. The first processes of handling cotton have a great bearing on the quality of yarn spun. The process of ginning cotton is quite often attended with most injurious effects. In the first place, the cotton gin is an ugly machine, and unless properly handled will cut and bruise cotton fibers to such an extent that their value is very much deteriorated. It is not enough, much to be feared, however, and that cotton is picked at intervals all the way from July to December. Heavy rains often fall over the cotton bolls in the South and





*seed cotton before the process of ginning takes place.* As a general thing, small ginneries are scattered all through the cotton-growing districts of the Southern States. At these places cotton is brought in from the plantations and ginned regardless, oftentimes, of its condition. Instead of this, *large and well-appointed ginneries* should be established at convenient and favorable points in the cotton-growing districts. These establishments *should buy the cotton in the seed and sell the product.* Let them purchase seed cotton on the plan followed by the great flouring-mills in the West, which buy wheat and corn, and grind it ready for consumption. Cotton bought in this way would, after being gathered, be handled by skilled labor in *improved processes*, as it is in the great manufacturing establishment of New England. This would be done to an advantage with a *handsome profit* to those engaged in the business, and a *great saving* to cotton growers and manufacturers. Cotton, when ginned, if in proper condition, will come out in the lint, *poor* in a perfect shower of silky fibers, weak and unpretentious of themselves, but when combined, possessing a power which is the basis of our country's wealth of commerce, gives life to cottons, factory engines and waterwheels, and brings wealth and prosperity to nations. Another reason why *seed cotton should be ginned* before being cottoned, is to have it come to the gin free from dirt and trash. This defect is now considered in the light it ought to be, in fact, it is heedlessly neglected, and for this reason our cotton fibers are very materially damaged, as they are constantly torn by the grains of sand when subjected to the severe pressure necessary in ginning. This, I think, is felt more when cotton is baled while in a damp state, as it lies closer

G. W.

### Cotton—Doubling and Drawing Cotton.

(See the Farm Record.)

Perfection in the drawing of cotton is affected adversely by various causes.

1st. By bad mixtures of seed before planting; severe rains soon after planting; protracted droughts; invasions of the caterpillars destroying the bolls; insects like the boll-worm, eating the plant; picking the cotton before it is fully matured in the boll; *indiscriminate picking of bolls, sticks and seed together*

"20. The cotton being properly protected from rains at the gin houses, is obtained when wet much half-polymerized lint is produced by the overloading of the saws, negligence in the inspection and assorting the cotton at different fields and makes of culture; the making of short and long, coarse and fine, unripe and slippery, with well-developed and well-twisted fibers, which, if worked alone would draw weak and make a nice, strong thread on the loom. The latter would test in one 10 to 12 per cent above extra quality, but if mixed in our bales together with the unripe and slippery, the new would be quality coming to drop below extra quality. Several good bales of quality are frequently found by good experts in cotton lots of a million bales both. This not only makes the whole lot first class, but sells for the price of a good American. In this view of the subject we may see the great importance of thoroughness in mixing cotton in the galls."

For many, one year's catch has been chopped and rolled into knots by the Wotey Saw Gum. Many efforts have been made to produce a machine to supersede that machine, but without much success.

From the study of processes at Mr. Larch the above system of  
 classification by means of groups A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, has been recommended to

American manufacturers employ comparatively a smaller number of heavy slivers, than in England, and the same holds true in drawing frames. The importance of guarding against too heavy slivers under one roller cannot be over-estimated. The standard is 20 and finer.

### Some Facts About Cotton—Eight Billion Dollars Drawn to the South Since 1865 to Pay for Cotton.

[From the *Manufacturer's Record*, Baltimore, 1896.]

Cotton is one of the most remarkable products that enters into the world's commercial and industrial interests. Its production gives the South a very great advantage over any other section of the country. Cotton is always in demand and its price improves steadily on the market. The staples are that since 1865 nearly \$8,000,000,000 have been brought into the South to pay for cotton, expended in part to complete the transportation powers of that section, thus enabling it to develop the most efficient methods have in the cotton raising, dependent on the amount of rain, yet there is no question but that the cotton-raising is a profitable crop that can be raised where a cottony soil is turned on intelligently on each farm. Some of our negroes have sold their own foodstuffs, making cash on their surplus money crop, find it a very profitable one, and abroad have easily been able to do financially.

The South produces about three-fourths of the world's cotton crop, but manufactures only about a single per cent of what it raises, the balance furnishing the material for over a million of spindles in New England and in Europe. The total cotton crop of the world now runs from about 100,000 to 110,000 bales, of which the South raises on an average, of late years, 7,000,000 bales. Upwards of 80,000,000 spindles are in operation in the world, and of this number the South has 160,000,000, but it should be remembered that in 1880 the South had only 40,000,000 spindles. The increase in the number of spinning spindles has been surprisingly great, and the future promises still more rapid growth.

Some facts regarding the production of cotton in the United States and the amount exported, will here be given.

COTTON TRADE OF THE UNITED STATES SINCE 1865.

| Crop year<br>from July 1 to<br>August 1. | Area in<br>Acres. | Total crop<br>in bales. | Total value<br>in U. S.<br>bales. | Cotton crop<br>in U. S.<br>bales. | Cotton Ex-<br>ports<br>in bales. | Value of<br>Exports. |
|--|-------------------|-------------------------|-----------------------------------|-----------------------------------|----------------------------------|----------------------|
| 1865-1866                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | \$281,385,223        |
| 1866-1867                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 291,450,423          |
| 1867-1868                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 312,210,733          |
| 1868-1869                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 323,210,733          |
| 1869-1870                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 334,210,733          |
| 1870-1871                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 345,210,733          |
| 1871-1872                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 356,210,733          |
| 1872-1873                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 367,210,733          |
| 1873-1874                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 378,210,733          |
| 1874-1875                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 389,210,733          |
| 1875-1876                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 400,210,733          |
| 1876-1877                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 411,210,733          |
| 1877-1878                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 422,210,733          |
| 1878-1879                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 433,210,733          |
| 1879-1880                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 444,210,733          |
| 1880-1881                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 455,210,733          |
| 1881-1882                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 466,210,733          |
| 1882-1883                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 477,210,733          |
| 1883-1884                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 488,210,733          |
| 1884-1885                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 499,210,733          |
| 1885-1886                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 510,210,733          |
| 1886-1887                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 521,210,733          |
| 1887-1888                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 532,210,733          |
| 1888-1889                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 543,210,733          |
| 1889-1890                                | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | 554,210,733          |
| Total                                    | 1,000,000         | 1,000,000               | 1,000,000                         | 1,000,000                         | 1,000,000                        | \$5,613,629,736      |

Estimated.

These figures are somewhat startling in their magnitude. They show that the aggregate value of the cotton raised in the South since 1865 has been over \$7,200,000,000, and that the value of cotton exported to foreign countries during the same period has been \$5,613,629,736. The great influence which cotton has exerted upon the foreign commerce of the United States can be readily appreciated from these figures.

It may be asked if \$7,200,000,000 of outside money has gone South since 1865 to pay for cotton, what has been accomplished, and why is the South still comparatively poor? The answer is that the condition of the agricultural interests of this section after the war, due to the extreme poverty of the people at the close of that disastrous struggle, to the system of securing money in advance by mortgaging the cotton to be raised, the exorbitant rates of interest, the purchase of necessity of farm and house supplies on credit at 60 to 75 to 80 per cent more than cash prices, all tended to consume the entire profits on the production of cotton. Until very recently these conditions were against the raising of home stock, food and other necessities and almost the entire aggregate received for cotton went back to the North for food and clothing. The condition of our country necessitated depend-

ence upon other sections for almost every line of manufactured goods, from a pin to a locomotive. A careful student of the history of this section will see that the South was not to blame except to a limited extent, for this condition of affairs. Gradually the people rallied from the disasters of war and commenced the development of manufactures and the diversification of their farm products. Their "smoke house and corn crib" have ceased to be in the West, and the South is now nearly self-supporting, supplying its consumptive requirements of foodstuffs. Cotton is yearly becoming more and more a surplus crop, and the several hundred millions of dollars which it annually yields will, in the future, largely remain here for the enrichment of this section, instead of going North and West to pay for bacon, biscuits and manufactured goods. In this change there is a revolution in the currents of business that must produce surprising results. Added to the one or two hundred millions of dollars of cotton money that have for twenty-five years annually gone North, but which will now remain in the South, will be an equal, or possibly a greater amount brought to the South to pay for the iron, the lumber and the cotton goods that are now being shipped North, the millions that will come to pay for mineral and cropper lands, the \$50,000,000 or more that is now paid for early vegetables and fruits, and the great aggregate, reaching probably already \$25,000,000, spent by winter visitors who come South to enjoy its climate. These facts are astounding. They can but impress any one with the mighty change that is now being wrought out in the condition of the South.

That the South, which produces the cotton, is destined to manufacture it, admits of no questioning. The South has the natural advantages necessary for success in this enterprise, and whatever difficulties there may be in the way are easily overcome when practical experience, backed by capital, is brought to bear upon the matter. There may be times of depression, but this will not stop the sure and steady growth of this great industry. Good operatives, it has been said by some, cannot be had in the South and this section can never hope so some of our New England friends claim, to do anything more than manufacture coarse goods. But a few years ago the same people were just as ready to claim that cotton manufacturing, even of coarse goods, would never amount to much in the South. Forced now to admit that

Southern mills control this branch of the business, they fall back on the threadbare argument against the possibility of the Southern mills ever successfully competing with New England mills on the finer goods. Before many years have passed they will be forced to abandon this. Every cotton mill that goes into operation in the South helps to make more certain the future supremacy of this section in every branch of this industry. With the increase in this business the number of trained operatives increases, and the skill necessary for the production of finer goods will be found ready at hand when the cotton manufacturers of the South decide that the time has come for devoting more attention to fine goods.

It was but a few years ago when the statement that the South would in time control the iron market of this country was ridiculed, and the reply made that, while the South might produce a large quantity of low grade pig iron, it could never hope to compete with the North in the finer, finished products of iron and steel, where an abundance of capital and skilled mechanics would enable that section to still control this branch of the business. At first the South demonstrated that it could make pig iron more cheaply than any other part of this country. Having done this, attention was turned to the building of enterprises for producing the finished goods, and locomotive works, car and car-wheel works, clock factories, toy foundries, hardware factories, nail mills, engine works, saw factories and hundreds of kindred enterprises are daily proving that the South can manufacture every variety of fine products requiring the highest skilled labor. As a result, we will be able to state: When the time is ripe, and that time seems to be at hand, for the South to turn its attention to finer qualities of cotton goods, it will do so, and do it successfully.

In 1889 the census reported \$29,782,868 invested in cotton manufacture in the United States, and the consumption of cotton by American mills 1,670,342 bales, or much less than one-fourth of an average crop. On this basis it would require an investment of over \$800,000,000 in mills to consume our entire cotton crop, so we can form some idea of what the magnitude of the cotton manufacturing interests is. Out of an estimated total of 80,000,000 spindles in the world, the United States has only about 13,000,000. Great Britain having over one-half, or 42,000,000. The normal consumption of cotton in the world is from 10,000,000

to 11,000,000 bales a year, of which the South furnishes 7,000,000 bales.

The *Manufacturers' Record* lately compiled, through special reports from cotton mills in the South, a list of all the mills in that section, with the number of spindles and looms in each; and comparing these figures with the report of the census of 1880, we have the following interesting table, showing a most remarkable increase:

| States.         | July 31, 1889. |                  |               | April 1, 1880. |                  |               |
|-----------------|----------------|------------------|---------------|----------------|------------------|---------------|
|                 | No. of Mills.  | No. of Spindles. | No. of Looms. | No. of Mills.  | No. of Spindles. | No. of Looms. |
| Alabama.....    | 21             | 131,904          | 2,414         | 16             | 4,432            | 163           |
| Arkansas.....   | 5              | 5,800            | 73            | 2              | 55               | 25            |
| Florida.....    | 1              | 1,400            | 1             | 1              | 800              | 1             |
| Georgia.....    | 73             | 145,998          | 10,246        | 40             | 128,636          | 4,963         |
| Kentucky.....   | 6              | 45,200           | 677           | 3              | 20,222           | 73            |
| Louisiana.....  | 5              | 60,280           | 1,784         | 2              | 6,096            | 190           |
| Maryland.....   | 25             | 175,642          | 3,536         | 19             | 127,006          | 2,425         |
| Mississippi.... | 11             | 69,595           | 2,054         | 3              | 17,568           | 644           |
| North Carolina  | 111            | 386,534          | 15,351        | 48             | 97,555           | 1,790         |
| South Carolina  | 11             | 117,730          | 10,687        | 11             | 87,634           | 1,676         |
| Tennessee.....  | 31             | 126,321          | 71            | 3              | 1,000            | 84            |
| Texas.....      |                | 90,565           | 1,000         |                |                  | 71            |
| Virginia.....   | 11             | 70,500           | 1,750         | 1              | 1,000            | 100           |
| Total.....      | 355            | 2,035,268        | 45,601        | 161            | 667,854          | 14,323        |

These figures show that the number of mills now in the South as compared with 1880 has doubled, while the number of spindles and looms has more than trebled, the tendency being to form mills of greater capacity than formerly. From 161 mills having 667,854 spindles and 14,323 looms in 1880 this industry has increased until there are now 355 mills with 2,035,268 spindles and 45,601 looms in the South. As remarkable as is this increase these figures really do not fully represent the development of the business, for they do not include the spindles and looms of many new mills now under construction, and others upon which work will shortly begin.

The importance of developing this industry cannot be too strongly emphasized. It keeps at home the great wealth produced in manufacturing the South's leading staple. As already shown on the basis of the capital invested and the bales of cotton consumed in American mills in 1880, an investment of \$500,000,000 would be required to manufacture the entire cotton crop of a





Alabama, which are, on the whole, the only ones in the Southern States of the South, is conducted by one of the most intelligent

1. Commercially important for oil and coal.
2. Commercial run by steam.
3. A very few run by water power.

The latter may be considered. The opening of the work is done by a single person, who is usually used when the ground is not more than one or two neighbors. The entrance is a small building of rough construction. The sand is piled in wagon and carried to the upper strata by means of a ladder. Four mile long stretches of lint cotton is thrown by a launch into the water, neither finished nor even started. The work is done one day to another. When one day ends, there is to be careful picking when the cotton is taken to the place

In the custom of ginners, the machinery is not so much carefully attended to, and the condition of the gins are vastly superior to those of the old-fashioned gins. A state of very grave doubt whether the condition of the gin is a better condition than in the primitive way of ginning is the reason to hear that *it is more common to find the gins in the old-fashioned way*. But the fact is that the new gins are always encumbered with machinery which they have by no other carried down from the old gins. The gin has his chief object being to catch the seed, and he is not concerned with the seed which he can pick up. The gin is not concerned with the gin is interested in getting through, he is not concerned with the seed, and he works with a view to accomplish his object, and in taking the largest toll, rather than with a view to produce a good and uninjured staple which he can turn to good use and profit. He runs his machinery at the highest possible speed and works as close as possible in order to make a large tick of his gin. If the truth were known, all "shepped" or even ginned cotton could probably be traced to gins of this sort.

the exchange, and the exchange has been able to buy cotton at a lower price than the market.

The exchange has also been able to make improvements, and to make improvements in the way of doing business by improving the way of doing business.

The exchange has been able to make improvements in the way of doing business by improving the way of doing business.

The exchange has been able to make improvements in the way of doing business by improving the way of doing business.

When the exchange was first organized, there was a great deal of interest in the way of doing business. The exchange was able to make improvements in the way of doing business by improving the way of doing business. It is quite certain that the exchange has been able to make improvements in the way of doing business by improving the way of doing business.

The exchange has been able to make improvements in the way of doing business by improving the way of doing business. The exchange has been able to make improvements in the way of doing business by improving the way of doing business. The exchange has been able to make improvements in the way of doing business by improving the way of doing business.

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## WHAT IS OUR COMPLETE SYSTEM?

### WHAT IS THE "MUNGER SYSTEM?"

From the earliest introduction of our system, the roller elevator and cleaner was commonly called, the "Munger Elevator," the "Munger System," and the "Munger Machine," and the present-day scientific method of handling cotton is generally known as the "Munger System." Now we would like to fully understand that by your system is meant not only our Elevator, Cleaner and Distributor, but also our Girth Feeders, Condensers, and especially our finished System of ginning from the gin or gins directly into our Double Boll, Self Packing Press.

### THE OLD WAY

Up to the year 1880, the old way of ginning was to use a Southern cotton gin, and to pack the ginned cotton in bales.

The average gin of that time was a small affair, containing more than ten bales, possibly twenty, and was usually of the capacity of forty bales capacity. These small gins were numerous, and they are very rare.

The small old gins were packed in bales, and were usually made of the same kind of material as the small sawmills of that time. These establishments were situated in the heart of the cotton country, and were crowded with men, boys and children, and were usually very noisy places. There were no elevators, and the cotton was usually packed in bales, and was usually very noisy places.

Many of them did not make more than a few hundred bales per year.

Each of them required a large amount of fuel, and was usually a very noisy place, and from one to two square miles. They were usually run by a small portable engine, with a few horses, and were usually of the capacity of forty bales, and were usually very noisy places. They were usually run by a small portable engine, with a few horses, and were usually of the capacity of forty bales, and were usually very noisy places.



mixed in with the rest of the cotton, and so when the seed-cotton  
over the floor masters the seed, it is a curse to the bolls and specks,  
more so when the seed is not so much broken up, and by making  
no notice of it, it is a great deal more so. The seed is very  
different from the bolls, to those who have been accustomed  
to a cotton seed, and lives, but when once only, is not amount  
to a great deal. The seed may be said of sweating and tramping  
the lint cotton.

## THE BASKET'S FAREWELL

## WELL-SHAPED COTTON BALES



They are light, and will generally pull more than the iron, and being split, admits of their being placed on the shaft after it is coupled, and moved from one position to another with much more ease than with the ordinary solid iron pulley. But where great speed is required, and a true and balanced wheel is desired, we furnish a wrought iron rim. For small sizes we prefer cast iron pulleys. We furnish all kinds, selecting that best adapted to the work to be done and the speed to be run.

## **SCALES**

It is a mistaken idea of some persons to locate the wagon scales either under the suction pipes, or just in front of them. It frequently happens that half a dozen or more wagons will arrive at one time, or will accumulate in the yard while the weigher is busy or absent—all waiting to be weighed. The scales should be placed near and convenient to the gin, but located so that any number of wagons, either empty or loaded, may be weighed and driven out of the way. It may be arranged so that after weighing, they may then be drawn up in a line or circle in rotation, and there await their turn, either at the gin or storage rooms. Some who gin for the seed, or for part of the proceeds of the bale, or so much per 100 lbs. of lint do not weigh the seed cotton at all. But our preference is to weigh all cotton, before and after being ginned, and then you know what you are doing.

## **BAGGING AND TIES**

We have been reading various articles, and listening with much interest to the various discussions and articles on the above subject, but we are unable to decide what the final result will be. There are friends to jute and friends to cotton, and friends to pine straw, and wire cloth, and now comes the cotton stalk. It seems to us that if bagging can be made from the stalk, that will compare in quality and price with jute, that it would be a boon to the Southern farmer. Or if not the stalk, then the cotton itself, provided it can be made and sold as cheaply as jute. At the present writing, this has not been proven sufficiently to cause its use as extensively as jute. Why not use the notes, as we clean and regin them, for this purpose? Thus will another unknown industry be added to the South's vast resources.

## OUR WITNESSES.

Our *Testimonials* are from parties who are using our Complete System of the Mungers' Improved Cotton-Gin. We have lent them to our friends who may like them; they write to them; then you see their outfits, then buy one for yourself and be happy:

OFFICE OF THE NATIONAL COTTON OIL CO.,  
PARIS, TEXAS, March 29, 1890.

*The Mungers' Improved Cotton-Machine Mfg. Co., Dallas, Texas:*

GENTLEMEN:—I am in receipt of your late favor asking for a description of the G-gin outfit which you furnished for the National Cotton Oil Co. and a statement as to whether the plant meets your satisfaction or not.

The gin building is 188.71 feet, outside measurement, two stories high, celled and painted overhead and on sides and ends (except the eaves) and finished rough with dirt floor in lower story, and smooth and covered on roof, sides and ends with corrugated iron. It is divided into three parts of 60, 60 and 68.71 building on a level with the ground, and 68.71 ft. high. The engine, 50 horse power, is in the lower story of the gin building, and the driving pulleys and steam cylinder, west of it in the upper story we have strung out in one line, six 70 saw Mungers' Gins, six 70-saw Mungers' Gin Feeders, one Lint-Blow, one 40-saw Mungers' Condenser, one Double Box Steam Cylinder Mungers' Cotton Press, one Mungers' Steam Packer, one Mungers' G-gin Suction Elevator and Distributor, and one seed Conveyer. Seed cotton and machinery is taken from the boilers in the mill building two hundred and twenty-five feet distant, and no fires or lights are used any nearer the gin building than this. With your suction Elevator, we draw seed cotton from storehouse in mill building at various points from 100 to 450 feet distant, also take four loads out on the Texas & Pacific Railway track seventy feet from the mill building. The seed cotton coming from either



place is conveyed directly into a Munger Vacuum box, where the dust and dirt are taken out, and from which it goes into a Munger Distributer, which fills the feeders that supply the gins. We run our *six gins all at once*, and they all gin *into one lint flue*, which conveys the lint cotton *into one Condenser*, which reels it off into one of the press boxes. As the cotton fills the Press Box, by simply pulling a lever, we run your self packer down on it, and out again quickly and smoothly, and in such manner as not to interfere with or clog the cotton coming out of the Condenser. This operation we repeat as often as may be necessary to make the size bale we want. When one box is full, we turn the other side of the empty box around to the Condenser to be filled, while the first box is being filled. The cotton is packed off and the completed bale is ready to be taken to the press. The gins and the press are conveyed to the press by a belt drive, which conveys them by wind into the feed house above mentioned, or into a car on the other side of it, as we may wish.

We *handle everything by steam and Mac per wind* and have no difficulty in conveying seed cotton by your suction from where we have it stored, or from cars or we go with sufficient capacity to keep all our seed cotton going. "There is no snigger in the box" with cotton, and with no snigger rustling to keep the seed out of the wind. When we have our cars packed with seed we place them over on the rail, and in the bottom of the seed house pull out an extension blower pipe, and in the proper angle inside of the car turn a valve and pay a hose out from it until we have obtained fifteen or eighteen feet of cotton, when we simply turn the slip point to the other end of the car, and the work of loading goes on until the car is as full as desired, when we draw in our pipe and turn it back over into the seed house until another car is placed over it. The hose is then drawn out and the work is repeated. We are here getting to the end of our seed house, and now we turn the hose around and put the seed car on it or such part of our seed house as we wish.

We go on with the same old method by steam and wind.

Our expenses are not very heavy, but they are somewhat heavier than it would be were they not in better management and under one person's control. As it is, we simply employ, for the operation of the entire outfit, the following force: One engineer, one fireman, one ginner, one boy as assistant ginner, two pressmen, one suction tender, and one man as a general utility man. This

force costs us, outside of the salaries paid the engineer and gunner, \$1.00 per day.

We have a complete Munger outfit, and while there are larger outfits in Texas, I know of none as complete in all of its appointments, and I feel safe in saying, *we have the best gin outfit in existence*. This, I know, is saying a good deal, but *I believe it to be so, and I will not say it*. The Gins, Feeders, Lint-Flue, Condenser, Double-Box Press, Suction Elevator, Seed Blower, and in fact everything in the outfit does its appointed work, and does it well, and the improvements you have made results in giving a *better staple and clearer cotton* than any other method. We are perfectly satisfied with the entire outfit.

Yours truly,

F. H. BAHY, *Agent*.

Three years ago we fitted up Messrs. Peter Faust & Co., of New Braunfels, Texas, with an outfit of our machinery consisting of Suction Elevator, Distributor, Gin Feeders, Lint-Flue System, Condenser and Double Box Press, to be placed on four good rows of other standard and popular make. Next year we sold them another complete outfit, same as above, with our gins to go on the same building right along by the side of the other row, and *they have said that they say of our gins*. They have one of the best equipped ginneries in the world, consisting of eight gins, with provision to run them from a magnificent water power, their capacity fifty bales per day with ease and first class work to fifty bales if necessary. Their custom is gaining rapidly, and they are gaining a world wide reputation, especially from Spain, for the quality of their product.

Office of Peter Faust & Co., General Merchants

New Braunfels, Texas, Jan. 16, 1889.

Messrs. F. C. M. Co.

DEAR SIRS:—We wish to express our fullest satisfaction with all the machinery bought of you. The two complete four 60 saw mill outfits *work to perfection* and *give* no trouble. Farmers are finding out the vast difference in cotton being handled by your system in comparison to the old way. Since having first used

your system we have become more and more convinced that it will take the place of the old way of ginning cotton altogether in the course of time, the advantages offered to the farmer being so evident that everybody sees the difference after a trial. At once is to be seen the convenience of the unloading through the Station Elevator, and the good effect it has on the *seed cotton* *to be loosened and cleaned before being fed into the gins*. The long Flue and large Condenser in place of the old condenser close behind the gin is *one of the best features of the system*, and we would not be without it. The increase in value is most apparent in the medium grades, as they are generally raised in Texas. The lower and medium grades are worth at least one-half cent more per pound when handled by your system. *Your gins have given us good satisfaction, being easily handled and making a smooth sample.* They have many advantages over other gins, the brush being run by the main belt and the large driving pulley on the gin saw shaft, also the raising of the breast and the adjustment of same. *We prefer them to any other make of gins.* Our success is the best proof. We ginned last season 350 bales, and have ginned up to date this season 1365, and will gin 300 more, and would have exceeded this considerably if we had had all the machinery ready at the beginning of the season. Wishing you success, we are yours, etc.,

PETER FAUST & Co.

NEW BRANFORD, TEXAS, FEB. 12, 1890.

*Munger Improved Cotton Machine Mfg. Co., Dallas, Texas.*

DEAR SIR: After using your improved machinery for the handling and ginning of cotton for the last three years, we can say that we are better pleased to-day than ever.

|                                  |           |
|----------------------------------|-----------|
| We ginned in the season of 1887, | 350 bales |
| " " " " 1888                     | 1,500 "   |
| " " " " 1889                     | 3,235 "   |
| Total                            | 5,125 "   |

At the same time we can say that to-day our machinery we bought of you is as good as it was when we received it from you, as the wear of the same is but very small, and with proper care there is no expense for repairs. Wishing you much success the coming season

Yours truly, PETER FAUST & Co.

RECEIVED FROM THE REPORT OF THE COMMITTEE OF THE DALLAS FAIR AND EXPOSITION ASSOCIATION, A SUMM OF \$25,000,000 TO THE SOUTHERN STATES, OR TO TEXAS \$5,000,000.

We the undersigned Committee, appointed at the Dallas State Fair and Exposition, report that we have thoroughly examined the working of the R. S. Munger's Improved Method of elevating, cleaning, ginning and pressing cotton without labor, and do respectfully bear testimony to the completeness and perfection with which the several machines perform the work for which they are designed, and commend them to the cotton planters of the South as being far superior to any cotton gin machinery yet invented.

The Munger Gins, as exhibited at your Fair, commend themselves for their adaptability for ginning cotton on his improved *system of rollers*. Strength, durability, simplicity, ease of handling, ease of adjustment and general economy in results, making a good staple and ginning the seed clean.

Mr. Munger's inventions are destined to work a great revolution in the cultivation and cleaning of cotton in the South, for his system will be a source of profit and satisfaction to every laboring cotton grower in the South, and will be a great benefit to the South, and to the cotton planters of the South.

JOHN C. MUMFORD,  
C. E. GORDON,  
B. F. HAYMONS,  
W. R. TAYLOR,  
D. P. HAYMONS,  
J. H. GIBSON,  
W. G. VEAR,  
L. L. GORDON,  
Dallas,  
Calvert,  
Bryan,  
*Committee.*

DALLAS, TEXAS, Feb. 12, 1890

Messrs. Munger & Co., Mfg. Co., Dallas, Texas:

DEAR SIR:—In reply to your inquiry as to how cotton ginned on your Improved Machinery works in our mills, beg to say it *works like a charm*. The Improved Method you use make the

cotton much *more desirable for spinning*, as the seed is *well preserved* and the cotton well cleaned. *Works well all the way through*, from the breakers to the looms.

*We will always give preference to cotton ginned and packed on your machinery, even at an advance in price.*

Yours, very truly,

DALLAS COTTON AND WOOLEN MILLS,

S. D. BLAKE, *President.*

FORNEY, TEX., Jan. 17, 1890

*Messrs. Munger I. C. M. Mfg. Co., Dallas, Texas:*

DEAR SIRS: I have been ginning for twenty years, and have used some six different make of gins, and as for your make of gins, I am satisfied it is the fastest gin and lightest draft that I ever used, and makes an *excellent sample*. And your machinery for handling seed and lint cotton is a complete labor saving machinery, as I have handled as many as thirty three bales in twelve hours, only using five men. As to your Self Packer, it is the grandest piece of gin work I ever saw, so far as to handle it, putting in thirty three bales per day, regardless of weight. With a short crop with us, I have ginned 4 1/4 bales, one weighing 750 pounds, one 708 pounds, and I am satisfied I can pack 1,000 pounds of cotton in my box with your self packer.

D. C. KISCAMP (Using a 3 7/8 saw Gin Outfit.)

HOOCHLIN, TEXAS, Dec. 11, 1889

*Messrs. Munger I. C. M. Mfg. Co., Dallas, Texas:*

DEAR SIRS: I will put in several more of your Gin Stands another year. *Your gins are the best in the world, without any exception.*

J. H. SORRELL

WHEELING, TEX., Jan. 14, 1890

*Messrs. Munger I. C. M. Mfg. Co., Dallas, Texas:*

DEAR SIRS: The machinery is the best I have seen in operation. I have got the whole thing complete and with satisfaction, has given satisfaction, and I cannot recommend it too highly for ginning and handling cotton.

B. T. BUCKTON

BECKAH, MISS., Jan. 29, 1890.

*Messrs. Munger, I. C. M. Mfg. Co., Dallas, Texas:*

DEAR SIR:—Your gin outfit sold us is a success, and improves the sample of cotton one-half to one cent per pound. We have much encouragement, which we will write you later about, from people in regard to the outfit. The Stand is all we could ask for, and is well adapted to the use of the worst hully cotton. Brushes have all the capacity we want; the Press and Self Packer is a complete success. The Steel Conveyor is a fine thing and no fault to its work. We feel satisfied we have the fine ginning outfit there is in the Mississippi Valley. Your Machinery and Stands have all the requisite qualifications and capacity of doing better work, and more substantial than any other make of machinery we have ever known or heard of in the so called Swamp Country. We trust you may sell many more in here, as you will as soon as people find out what it is.

DEWEZ & COLESON (Using a 3 70 saw Gin Outfit.)

PEARLAND, TEXAS, Feb. 22, 1890.

*Messrs. Munger, I. C. M. Co., Dallas, Texas:*

DEAR SIR:—As to your system of ginning and handling cotton, would say I deem it far superior to anything I have yet seen for the business. I cannot see how the principle can be improved upon. I would not take one of the old style ginneries as a gift, if I was compelled to run it. The gins are easily managed; the Feeders give no trouble; the Distributer does all that is required of it, and the Double Box Press and Steam Cylinder are much the best I have seen; is convenient strong and speedy, as we have pressed a bale and rolled it out in three and one half minutes time steam was turned on. Wishing you success,

L. S. SPOONER (Using a 3 70 saw Outfit.)

OFFICE OF OTTO BUCHEL & Co.,  
WHOLESALE GROCERS AND COM. MERCHANTS,  
BANKS AND EXCHANGE, CLEVO, TEX. }

*Munger Improved Cotton Machine Mfg. Co., Dallas, Texas:*

DEAR SIR:—The third season's work of our new ginnery is

about closed and about 10,000 bales of cotton have been turned out, now it may be said that a thorough test of your machines in detail has been established. The conveying of seed cotton by suction in conjunction with your Vacuum Box and Vacuum Feeder and Distributer is a *success beyond contradiction*:

First, in the great *security* from the *risk of fire*; second, in the *easy transmission* of seed cotton; third, in the *freeing* from *sand* and *dust*, loosening and *preparing* every lock of seed cotton for the gin. Your *simple belted gin* offers *many conveniences* and *does good and rapid work*. The Common Fine and Condenser throwing cotton directly into your Double-Box press is no longer an experiment, but a fixed fact, for performing good and faithful service. Your Double-Box Presses are substantial and rapid, and if hydraulic or any reliable power is used, they will never give trouble. We cheerfully recommend your system and machinery to all progressive ginner.

Yours, very truly,

BURCH, MILLING CO. (Using a 10-gin Outfit for 3 years.)

LISBON, DALLAS CO., TEXAS.

*Munger I. C. M. Mfg. Co., Dallas, Texas:*

GENTLEMEN: Your machinery is a complete success in all its parts. We are highly pleased with its work for several reasons. It pleases our customers; it *cleans the cotton and makes a better sample* than any other gin machinery we have ever seen; it is simple and easily operated; it carries the dust out of the building, making it more pleasant for the operatives, therefore hands do not cost so much. As your gin has but one belt to run saws and brush it does away with the frequent facing of a narrow brush belt. I have had considerable experience with gins and operating machinery, and have to say your machinery complete, as I have it, has not been excelled in this country yet, nor I don't think likely to be soon. I take it that if a man does anything good for his fellow man, he is entitled to his full share of the credit for the same. Consequently *R. S. Munger's head has done more to benefit the cotton producers of this country than any one head this side the river, and I take pleasure in recommending his machinery to any one embarking in the gin business.*

R. A. GRACEY (Using a 370 saw Outfit)

## THE MUNGER IMPROVED COTTON MACHINERY.

(Texas Farm and Ranch).

Through several issues of *Texas Farm and Ranch* it is our purpose to describe the leading manufacturing enterprises of Texas. We do this for the purpose of calling attention to the fact that Texas is rapidly becoming a manufacturing country, and to encourage the future development of the industrial spirit. We present herewith a brief description of the Munger Improved Cotton Machinery and the factory at Dallas.

Mr. R. S. Munger, the patentee, is a native of this State. At an early age he began operating a ginnery; and soon noticing the enormous amount of labor and small profits attached to this line of business, he at once devoted a portion of his time and attention to devising some means by which he could reduce expenses, save labor and improve the cotton.

This led to remodeling and improving his machinery, which, in the course of time, developed into the present perfect system of handling cotton.

His improvement attracted much attention and he at once patented them and commenced to construct other ginneries on the same plan as his own. And following the general tide of enterprise and capital he located in Dallas. Here he manufactured and sold his machinery until he found that the increased demand for his machinery was so great that he organized a stock company, embracing some of the leading capitalists and business men of Dallas. And now the new company, presents to the ginneries of the United States, the most improved means of handling seed cotton, with ample facilities to meet the enormous demand.

## MUNGER IMPROVED COTTON MACHINE M'FG CO.

(Dallas Herald, June 4, 1885).

We take pleasure in calling attention to the above corporation, which will be found of great interest to all ginneries and cotton men. This company has purchased the Munger patents on improved cotton gin machinery for the territory west of the Mississippi river. It is composed of some of the wealthiest men in the State, and known throughout Texas as men of means and push, such as Mr. J. L. Elliott, capitalist and lumber merchant; Capd



At H. Cassin's bank, I find Mr. Minger, who is in the office of the Office of the Chief of the Southern Railway, and Mr. W. White, who is in the office of the Chief of the Mississippi River. They are both men who are well known in business, and of whom it is well known that they are well known throughout the country. The company, with a capital of \$1,000,000, is now in the process of its full extension, and will, in the course of the next year, manufacture and sell millions of dollars to Texas and the South. They occupy some three acres near the Main street building.

Their shops are numerous, structure two stories high, containing all the latest and most improved machinery. Their yards are packed with the choicest broken and they are now in the process of being replaced by new and improved machinery.

The Minger Improved machinery is so well known for its six or seven different models, and its great success would be so great that it is not only as they will be glad to see you, and show you every detail of their work. Mr. J. S. Minger, who is the patentee, and is a partner of the different articles, his specimens of his improved machinery, and has expended thousands of dollars in bringing his machinery to its present perfection. He has been experimental for years at all times open to a young man, he has succeeded in keeping his discoveries a secret. He has always been perfectly free to show his improvements, and he has not taken out a patent on any of his machinery until the machine had proved a success. No infringement of any other patent would ever be thought of, and none would be allowed on his valuable improvements.

The past increase of sales and popularity of Mr. Minger's inventions is but an index of what the company may expect in the largely increased market for the coming year. They manufacture everything that is required, such as complete modern cotton ginning. Their works are the largest in Dallas, and they are working full force to supply the orders they are receiving.

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| Peter Faust & Co., New Braunfels, Tex., 8-gin outfit  | 65 |
| Committee Texas State Fair and Exposition, Dallas     | 65 |
| Dallas Cotton and Woolen Mill, S. D. Blake, President |    |
| D. C. Kincaid, Forney, Tex., 15-50-gin outfit         | 65 |
| J. H. Schwab, Hochheim, Tex., 4-gin outfit            | 65 |
| B. T. Blanton, Whitewright, Tex., 2-gin outfit        | 65 |
| Deitz & Conson, Bentah, Miss., 3-butter-gin outfit    |    |
| L. S. Seoville, Pearsall, Tex., 2-gin outfit          | 65 |
| Buchell Milling Co., Cuero, Tex., 10-gin outfit       | 65 |
| E. A. Gracey, Dallas, Tex., 3-gin outfit              | 65 |
| Dallas Herald   | 65 |
| Texas Farm and Ranch, Dallas                          |    |
| And many others                                       |    |

















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